



U.S. Department  
of Transportation

National Highway  
Traffic Safety  
Administration

400 Seventh Street, S.W.  
Washington, D.C. 20590

Dear Crash Data Researchers/Users:

Thank you for choosing crash data from the National Highway Traffic Safety Administration (NHTSA) for your research or other use. The information contained in this motor vehicle crash report is collected, maintained and distributed in accordance with Public Law 89-564. In accordance with this Public Law, NHTSA is required not to release any case information until completion of quality control procedures. These procedures include a review of the case material to extract all names, licenses and registration numbers, non-coded interview material, non-research related researcher comments in the margins, non-factual data, and the production number portion of the vehicle identification number (VIN).

If you requested NHTSA to query its database files in order to identify a specific crash, then that query was made using non-personal descriptors you provided for use in our search. This motor vehicle crash may have been identified from a data search and matches the general, non-personal descriptors you provided, but we cannot confirm that this is the specific crash report you requested.

If you have any questions with regard to the above procedures, please contact the Field Operations Branch, Crash Investigation Division, National Center for Statistics and Analysis at 202-366-4820. Again, please be advised that we cannot confirm that this is the case that you have specifically requested nor can we certify the information to be correct.

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AUTO SAFETY HOTLINE  
(800) 424-9393  
Wash. D.C. Area 366-0123

## **DISCLAIMERS**

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.



DYNAMIC SCIENCE, INC.

Contract No. DINH22-87-C-47169

REMOTE AIRBAG INVESTIGATION

DSI-90-AB-01

~~REDACTED~~-90

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.



# TECHNICAL SUMMARY

Contractor: Dynamic Science, Inc.  
 Contract No.: DINH22-87-C-47169  
 Case Number: DSI-90-AB-1

~~XXXXXXXXXX~~  
~~XXXXXXXXXX~~  
~~XXXXXXXXXX~~

This single vehicle collision occurred in mid-winter during the early morning hours within the confines of a two-lane, one-way tunnel in the ~~XXXXXXXXXX~~.

Vehicle 1, a 1989 Porsche 944 S2 equipped with a dual air cushion restraint system, was being driven southbound in the second lane of a curved roadway by a 26 year old male at approximately 50 MPH. A 21 year old female was seated in the right front seating position. A non-contact vehicle in the adjacent, right-hand lane changed lanes in front of Vehicle 1. The driver of Vehicle 1 attempted to avoid the collision by steering to the right. Vehicle 1 crossed into the right-hand lane and collided with the right side of the tunnel wall and a raised curb at a shallow angle. It was during this impact that both the driver and passenger airbags deployed.

The driver stated that while the airbags did deploy, they did not inflate. It is this investigator's opinion that the airbags did deploy correctly, and the driver's perception that there was no inflation was due to the rapid deflation of the airbag. Subsequent investigations by the vehicle manufacturer, according to the driver, indicate that the system did work properly.

After the first contact with the wall, Vehicle 1 was redirected and struck this same wall a second time causing sideswipe damage along the right quarter panel. The driver attempted to regain control of the vehicle by steering to the left. Vehicle 1 re-entered the left-hand lane and struck the left side of the tunnel wall at a somewhat steeper angle than the initial contact. Vehicle 1 was redirected and struck the wall once more before coming to rest facing south. There were four impacts in this accident.

# Technical Summary - DSI-90-AB-01

Both occupants of Vehicle 1 were injured during the collision. The driver sustained contusions to both knees, an abrasion to right arm, a contusion to the left arm, and a neck strain. The right front occupant sustained a concussion, a contusion to the forehead, contusions to both knees, and a neck strain. Both occupants visited a physician the following day. According to the driver, both occupants were using their lap and shoulder belts at the time of the collision. This conflicts with information derived from the vehicle inspection. It appears that the driver was indeed restrained, but there was no indication of restraint usage for the right front occupant. This, coupled with head contact with the windshield, suggests that this occupant was not restrained.

Vehicle 1 was towed from the scene. It sustained major damage (\$33,000) and was subsequently declared a total loss.

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Dynamic Science, Inc.  
Remote Investigation

Accident Data:

Location:	[REDACTED] Washington
Area/Type:	Urban
Date/Time:	[REDACTED] 1990 / 0200 hours
Accident Type:	Vehicle v. Fixed Object (four impacts)
Severity (airbag vehicle, V1):	AIS-1

Ambience:

Light Conditions:	Unknown
Cloud Cover:	Unknown
Precipitation:	Unknown
Road Surface:	Unknown

Roadway:1

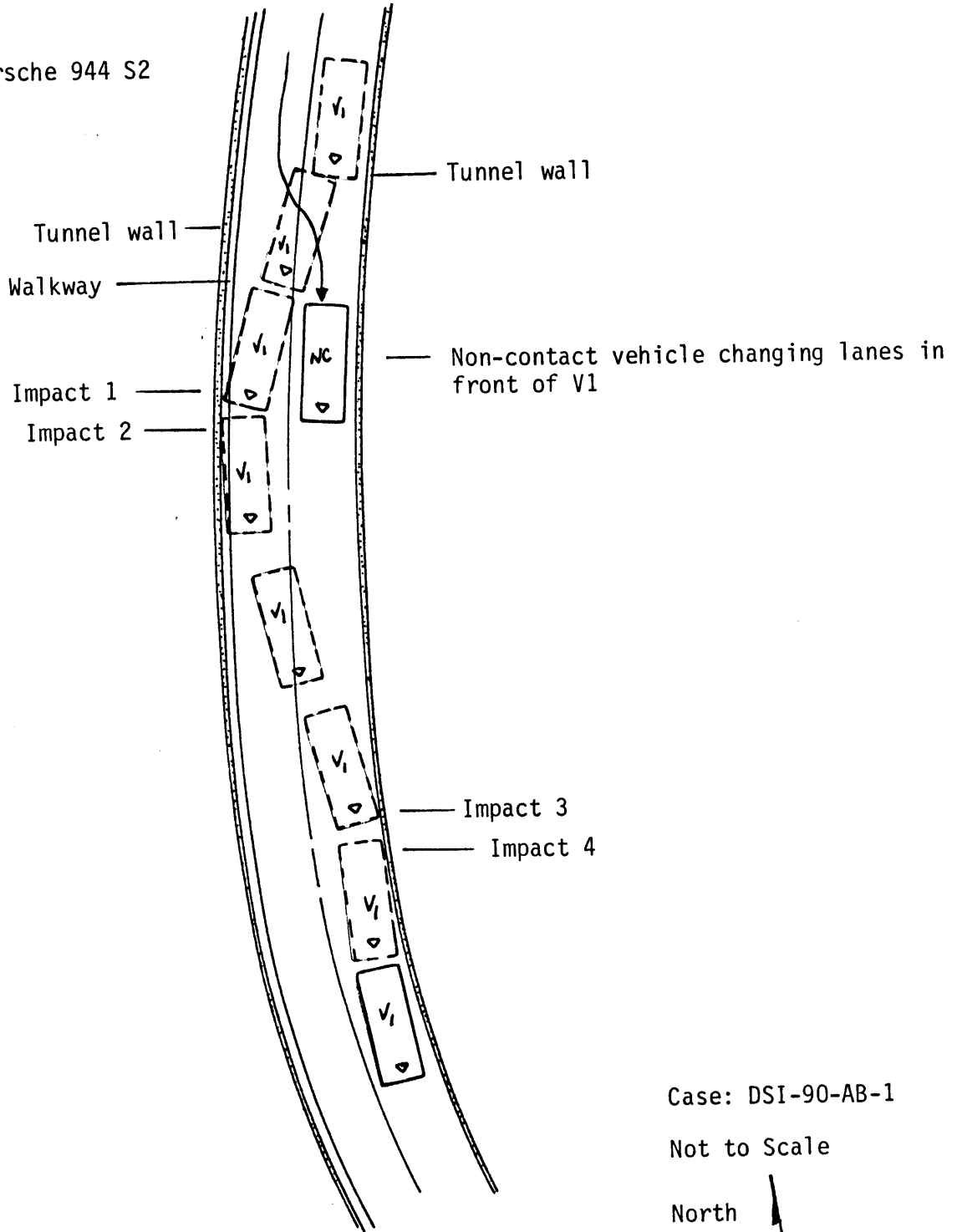
Type:	Two-lane, one-way tunnel
Width:	Unknown
Traffic Density:	Unknown
Median:	None
Edge:	Wall on left, curb with narrow walkway on right.
Surface:	Unknown
Coefficient of Friction:	Unknown
Vertical Alignment:	Left-hand curve
Horizontal Alignment:	Unknown

Traffic Controls:1

Signals:	Unknown
Signs:	Unknown
Speed Limit:	Unknown
Markings:	Unknown

1 This was a remote investigation. No scene inspection was conducted.

V1: 1989 Porsche 944 S2



Case: DSI-90-AB-1

Not to Scale

North

DSI-90-AB-01

Vehicles:

Vehicle 1

Description:	1989 Porsche 944 S2
Odometer:	9649
Engine:	3.0 liter
Active Restraints:	Three-point manual lap and shoulder
Passive Restraints:	Airbag, driver and passenger
Reported Defects:	None
Cargo:	None
Securiflex Windshield:	No
Windshield Damage:	Yes, from contact by right front occupant
Fleet:	No
Previous Repairs:	Unknown
Tow Status:	Towed due to damage

Vehicle Damage:

Vehicle 1

Exterior:	Moderate crushing to the left front bumper area. Moderate crushing to the right front bumper corner with buckling of the right front fender and the hood. Sideswipe type damage to both the right and left rear quarter panels.
CDC Impact 1	12FREE1
CDC Impact 2	12RBES1
CDC Impact 3	12FLEE2
CDC Impact 4	12LBES1
Interior:	Windshield cracked from occupant contact. Targa top missing (according to driver, the top popped off during the airbag deployment). Mirror and visors apparently removed.

DSI-90-AB-01

Vehicle Velocity Estimates:2

Vehicle 1	Impact 1	Impact 3
Impact Speed:	Unknown	Unknown
Total Delta V:	8.6	8.7
Longitudinal Delta V:	-8.6	-8.6
Lateral Delta V:	-0.8	+1.5
Energy Dissipation:	10125.1 ft. lbs.	9144.9 ft. lbs.

2 The CRASH results for Impacts 1 and 3 are low. During Impact 1, the right front of the bumper was crushed approximately 6-8 inches rearward, which also rotated the left front bumper forward. Given the presence of a curb parallel to the wall, it would appear that the right front tire of this vehicle contacted that curb. During Impact 3, this instance was reversed. Thus, the true crush profile for either of the impacts is not known.

DSI-90-AB-01

# Collision Sequence:

## Pre-Crash:

Vehicle 1 was being driven southbound in the second lane of a two-lane one-way roadway within a tunnel at approximately 50 MPH. A non-contact vehicle in the adjacent, right-hand lane changed lanes in front of Vehicle 1. The driver of Vehicle 1 steered to the right to avoid a collision and crossed the right-hand lane.

## Crash:

Impact 1: The right front corner of Vehicle 1 struck the tunnel wall and was then redirected both longitudinally and in a counterclockwise direction.

Impact 2: As Vehicle 1 was redirected, the right rear quarter panel of the vehicle came into contact with the wall. The driver attempted to regain control by steering to the left. The vehicle crossed the divider line and entered the left-hand lane.

Impact 3: At this point, the left front corner of the vehicle struck the left-hand portion of the tunnel at a slightly steeper angle than the original impact and was then redirected longitudinally and in a clockwise direction.

Impact 4: As Vehicle 1 was redirected, the left rear quarter panel of the vehicle came into contact with the wall.

## Post-Crash:

Vehicle 1 came to rest facing south in the left-hand lane of travel.

## Driver Activity:

It is not known what the driver did subsequent to the collision.

## Scene Clearance:

Vehicle 1 was towed from the scene due to disabling damage. According to the driver, the collision was investigated by a local police agency but, according to the [REDACTED] Records, no accident report was filed.



DSI-90-AB-01

Driver and Other Occupants:

	Vehicle 1
Age/Sex:	26 years / Male
Seated Position:	Left Front
Height:	67 inches
Weight:	135 lbs.
Occupation:	Unknown
Physical State:	Unknown
Body Posture:	Normal, upright
Hand Position:	Unknown
Foot Position:	Unknown
Active Restraint Usage:	Lap/Shoulder belt
Additional Occupants:	Yes, 1
Age/Sex:	21 years / Female
Seated Position:	Right Front
Height:	62 inches
Weight:	110 lbs.
Occupation:	Unknown
Physical State:	Unknown
Body Posture:	Normal, upright
Hand Position:	NA
Foot Position:	NA
Active Restraint Usage:	None

DSI-90-AB-01

Injuries:

Driver:

Injury Description	AIS	Injury Source
Contusion, left forearm	1	Steering wheel
Abrasion, right upper arm	1	Unknown
Contusion, right knee	1	Lower dash
Contusion, left knee	1	Lower dash
Neck strain	1	Inertial forces

In addition, this occupant complained of a back ache and some dizziness.

Right front seated occupant:

Injury Description	AIS	Injury Source
Concussion	1	Windshield
Contusion, forehead	1	Windshield
Contusion, left knee	1	Lower dash
Contusion, right knee	1	Lower dash
Neck strain	1	Windshield

In addition, this occupant complained of a back ache.

DSI-90-AB-01

#### Driver Kinematics:

The driver was aware of the impending impact and probably braced for the impact. It appears that the driver was in his proper seating position. At the first impact, the driver was thrown forward longitudinally and slightly to the right, and struck the now-deployed airbag. The effect of the second impact was apparently negligible since he did not recall this impact. At the third impact, the driver was thrown forward longitudinally and slightly to the left. The driver indicated that he sustained an abrasion on one arm and a contusion on the other. It is not clear when these injuries occurred, although both are characteristic of airbag deployment contacts. The driver was not cognizant of the fourth impact, so it would appear there was little movement by the driver.

#### Right Front Seated Occupant Kinematics:

It is not known if this occupant was aware of the impending collision. It appears that this unrestrained occupant was thrown forward longitudinally during the first impact, contacted the now-deployed airbag and possibly contacted the lower dash with her knees at this time. During the second impact, this occupant probably shifted slightly to right during the rebound. During the third impact, this occupant was thrown unimpeded longitudinally and to left. This motion brought her into contact with the windshield which caused the forehead contusion and the concussive injury. This same contact may have produced a superflexive extension of the neck with the resultant strain, but this is far less clear.





DS 9001 #1  
Best Available



**DS8001 #2**  
**Best Available**



DS 9001 #3



DS 9001 #4





DS 9001 #5



DS 9001 #6



DS9001 #7



DS9001 #8



DS9001 #9



DS9001 #10



DS9001 #11



DS9001 #12





DS9001 #13



DS9001 #14



DS9001 #15



DS9001 #18



DS 9001 #17



DS9001 #18  
Best Available



**DS9001 #19**  
**Best Available**



DS 9001 #20  
Best Available





DS 9001 #21  
Best Available



DS 9001 #22  
Best Available



DS 9001 #23



DS 9001 #24



DS9001 #25



DS 9001 #26



DS 9001 #27



DS 9001 #28





DS 9001 #29



DS9001 #30



DS 9001 #31



DS 9001 #32



DS 9001 #33



DS 9001 #34



DS 9001 #35



DS9001 #36





DS9001 #37



DS 9001 #38

## APPENDIX



## ACCIDENT FORM

BEST AVAILABLE COPY

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

<b>1. Primary Sampling Unit Number</b> <u>      </u> <u>      </u>				<b>SPECIAL STUDIES INDICATORS</b>			
<b>2. Case Number — Stratum</b> <u>DSI-90-AB-1</u>							
<b>IDENTIFICATION</b>							
<b>3. Number of General Vehicle Forms Submitted</b> <u>0</u> <u>1</u>				<div>Check (✓) each special study (SS12-SS16 below) that has been completed; code 1 for the checked special studies and 0 for the special studies not checked.</div> <div>6. <u>      </u>SS12 Anti-lacerative Windshields      <u>0</u></div> <div>7. <u>      </u>SS13      <u>0</u></div> <div>8. <u>      </u>SS14      <u>0</u></div> <div>9. <u>      </u>SS15      <u>0</u></div> <div>10. <u>      </u>SS16      <u>0</u></div>			
<b>4. Date of Accident (Month, Day, Year)</b> <u>9</u> <u>0</u> <u>8</u>							
<b>5. Time of Accident</b> <u>0</u> <u>2</u> <u>0</u> <u>0</u>							
Code reported military time of accident.							
NOTE: Midnight = 2400 Unknown = 9999							
<b>NUMBER OF EVENTS</b>				<div>11. Number of Recorded Events in This Accident      <u>0</u> <u>4</u></div> <div>Code the number of events which occurred in this accident.</div>			
<b>ACCIDENT EVENTS</b>							
For each event that occurred in the accident, code the lowest numbered vehicle in the left columns and the other involved vehicle or object on the right.							
Accident Event Sequence Number	Vehicle Number	Class of Vehicle	General Area of Damage	Vehicle Number or Object Contacted	Class of Vehicle	General Area of Damage	
12. <u>0</u> <u>1</u>	13. <u>0</u> <u>1</u>	14. <u>0</u> <u>1</u>	15. <u>F</u>	16. <u>5</u> <u>8</u>	17. <u>0</u> <u>0</u>	18. <u>0</u>	
19. <u>0</u> <u>2</u>	20. <u>0</u> <u>1</u>	21. <u>0</u> <u>1</u>	22. <u>L</u>	23. <u>5</u> <u>8</u>	24. <u>0</u> <u>0</u>	25. <u>0</u>	
26. <u>0</u> <u>3</u>	27. <u>0</u> <u>1</u>	28. <u>0</u> <u>1</u>	29. <u>F</u>	30. <u>5</u> <u>8</u>	31. <u>0</u> <u>0</u>	32. <u>0</u>	
33. <u>0</u> <u>4</u>	34. <u>0</u> <u>1</u>	35. <u>0</u> <u>1</u>	36. <u>R</u>	37. <u>5</u> <u>8</u>	38. <u>0</u> <u>0</u>	39. <u>0</u>	
40. <u>0</u> <u>5</u>	41. <u>      </u>	42. <u>      </u>	43. <u>      </u>	44. <u>      </u>	45. <u>      </u>	46. <u>      </u>	
47. <u>0</u> <u>6</u>	48. <u>      </u>	49. <u>      </u>	50. <u>      </u>	51. <u>      </u>	52. <u>      </u>	53. <u>      </u>	
54. <u>0</u> <u>7</u>	55. <u>      </u>	56. <u>      </u>	57. <u>      </u>	58. <u>      </u>	59. <u>      </u>	60. <u>      </u>	
61. <u>0</u> <u>8</u>	62. <u>      </u>	63. <u>      </u>	64. <u>      </u>	65. <u>      </u>	66. <u>      </u>	67. <u>      </u>	
68. <u>0</u> <u>9</u>	69. <u>      </u>	70. <u>      </u>	71. <u>      </u>	72. <u>      </u>	73. <u>      </u>	74. <u>      </u>	
75. <u>1</u> <u>0</u>	76. <u>      </u>	77. <u>      </u>	78. <u>      </u>	79. <u>      </u>	80. <u>      </u>	81. <u>      </u>	
IF GREATER THAN TEN EVENTS, CONTINUE CODING ON THE ACCIDENT EVENTS SUPPLEMENT							

## CODES FOR CLASS OF VEHICLE

- (00) Not a motor vehicle
- (01) Subcompact/mini (wheelbase < 100 ")
- (02) Compact (wheelbase = 100 "–104 ")
- (03) Intermediate (wheelbase = 105 "–109 ")
- (04) Full size (wheelbase = 110 "–114 ")
- (05) Largest (wheelbase ≥ 115 ")
- (09) Unknown passenger car size
- (11) Short utility vehicle
- (12) Truck based utility (≤10,000 lbs GVWR)
- (13) Passenger van (≤10,000 lbs GVWR)
- (14) Other van (≤10,000 lbs GVWR)
- (15) Pickup truck (≤10,000 lbs GVWR)
- (18) Other truck (≤10,000 lbs GVWR)
- (19) Unknown light truck type
- (20) School bus
- (21) Other bus
- (22) Truck (>10,000 lbs GVWR)
- (23) Tractor without trailer
- (24) Tractor-trailer(s)
- (25) Motored cycle
- (28) Other vehicle
- (99) Unknown

## CODES FOR GENERAL AREA OF DAMAGE (GAD)

### CDC APPLICABLE AND OTHER VEHICLES

- (0) Not a motor vehicle
- (N) Noncollision
- (F) Front
- (R) Right side
- (L) Left side
- (B) Back
- (T) Top
- (U) Undercarriage
- (9) Unknown

### TDC APPLICABLE VEHICLES

- (0) Not a motor vehicle
- (N) Noncollision
- (F) Front
- (R) Right side
- (L) Left side
- (B) Back of unit with cargo area (rear of trailer or straight truck)
- (D) Back (rear of tractor)
- (C) Rear of cab
- (V) Front of cargo area
- (T) Top
- (U) Undercarriage
- (9) Unknown

## CODES FOR VEHICLE NUMBER OR OBJECT CONTACTED

(01-30) – Vehicle number

### Noncollision:

- (31) Overturn – rollover
- (32) Fire or explosion
- (33) Jackknife
- (34) Other intraunit damage (specify):

(35) Noncollision injury

(38) Other noncollision (specify):

(39) Noncollision – details unknown

### Collision with Fixed Object

- (41) Tree (≤4 inches in diameter)
- (42) Tree (>4 inches in diameter)
- (43) Shrubbery or bush
- (44) Embankment

(45) Breakaway pole or post (any diameter)

### Nonbreakaway Pole or Post

- (50) Pole or post (≤4 inches in diameter)
- (51) Pole or post (>4 but ≤12 inches in diameter)
- (52) Pole or post (>12 inches in diameter)
- (53) Pole or post (diameter unknown)

(54) Concrete traffic barrier

(55) Impact attenuator

(56) Other traffic barrier (specify):

(57) Fence

(58) Wall

(59) Building

(60) Ditch or culvert

(61) Ground

(62) Fire hydrant

(63) Curb

(64) Bridge

(68) Other fixed object (specify):

(69) Unknown fixed object

### Collision with Nonfixed Object

(71) Motor vehicle not in transport

(72) Pedestrian

(73) Cyclist or cycle

(74) Other nonmotorist or conveyance (specify):

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(88) Other nonfixed object (specify):

(89) Unknown nonfixed object

(98) Other event (specify):

(99) Unknown event or object

## GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

<p>1. Primary Sampling Unit Number <u>          </u></p> <p>2. Case Number—Stratum <u>DSI-90-AB-1</u></p> <p>3. Vehicle Number <u>01</u></p> <p style="text-align: center;"><b>VEHICLE IDENTIFICATION</b></p> <p>4. Vehicle Model Year <u>89</u> Code the last two digits of the model year (99) Unknown</p> <p>5. Vehicle Make (specify): <u>45</u> <u>PORSCHE</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. <u>SIZE1</u> (99) Unknown <u>STIFF.1</u></p> <p>6. Vehicle Model (specify): <u>037</u> <u>944 S2</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. (999) Unknown</p> <p>7. Body Type <u>03</u> Note: Applicable codes are found on the back of this page.</p> <p>8. Vehicle Identification Number <u>WP0AB2942K</u> Left justify; Slash zeros and letter Z (0 and Z) No VIN—Code all zeros Unknown—Code all nine's</p> <p style="text-align: center;"><b>OFFICIAL RECORDS</b></p> <p>9. Police Reported Vehicle Disposition <u>9</u> (0) Not towed due to vehicle damage (1) Towed due to vehicle damage (9) Unknown</p> <p>10. Police Reported Travel Speed <u>99</u> Code to the nearest mph (NOTE: 00 means less than 0.5 mph) (97) 96.5 mph and above (99) Unknown</p>	<p>11. Police Reported Alcohol or Drug Presence <u>9</u> (0) Neither alcohol nor drugs present (1) Yes (alcohol present) (2) Yes (drugs present) (3) Yes (alcohol and drugs present) (4) Yes (alcohol or drugs present—specifics unknown) (7) Not reported (8) No driver present (9) Unknown</p> <p>12. Alcohol Test Result for Driver <u>99</u> Code actual value (decimal implied before first digit—0.xx) (95) Test refused (96) None given (97) AC test performed, results unknown (98) No driver present (99) Unknown Source <u>                                </u></p> <p style="text-align: center;"><b>ACCIDENT RELATED</b></p> <p>13. Speed Limit <u>99</u> (00) No statutory limit Code posted or statutory speed limit (99) Unknown</p> <p>14. Attempted Avoidance Maneuver <u>99</u> (00) No impact (01) No avoidance actions (02) Braking (no lockup) (03) Braking (lockup) (04) Braking (lockup unknown) (05) Releasing brakes (06) Steering left (07) Steering right (08) Braking and steering left (09) Braking and steering right (10) Accelerating (11) Accelerating and steering left (12) Accelerating and steering right (97) No driver present (98) Other action (specify): <u>  </u> (99) Unknown</p> <p>15. Accident Type <u>03</u> Applicable codes may be found on the back of page two of this field form (00) No impact Code the number of the diagram that best describes the accident circumstance (98) Other accident type (specify): <u>  </u> (99) Unknown</p>
--	--

\*\*\*\* STOP HERE IF GV07 DOES NOT EQUAL 01-49 \*\*\*\*

## CODES FOR BODY TYPE

### CDS APPLICABLE VEHICLES

#### Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (08) Other automobile type (specify): \_\_\_\_\_

- 
- (09) Unknown automobile type

#### Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, and Brat)
- (11) Auto based panel (cargo station wagon, includes auto based ambulance/hearse)
- (12) Large limousine—more than four side doors or stretched chassis

#### Utility Vehicles

- (13) Short utility—not truck based (includes Jeep CJ-5, Jeep CJ-7, Renegade, Landrover, Pre-78 Bronco, Landcruiser, Thing)
- (14) Truck based utility (2-door; includes Blazer, Bronco—78 on, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

#### Van Based Light Trucks ( $\leq 10,000$ lbs GVWR)

- (20) Minivan (Español, Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager [84 and after], Dodge Vista, Mini Ram Van, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
- (21) Standard van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally, Voyager [83 and before], Beauville, Sportsman)
- (28) Other van type (specify): \_\_\_\_\_
- (29) Unknown van type

#### Light Conventional Trucks (Pickup Style Cab, $\leq 10,000$ lbs GVWR)

- (30) Compact pickup ( $<4,500$  lbs. GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
- (31) Standard pickup (4,500 to 10,000 lbs. GVWR, C10 - C30, K10 - K30, T10, D100 - D350, W150 - W350, F100 - F350, Comanche, J10 - J30, Dakota)
- (32) Pickup with slide-in camper
- (33) Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
- (34) Light truck based suburban limousine
- (39) Unknown (pickup style) light conventional truck type

#### Other Light Trucks ( $\leq 10,000$ lbs GVWR)

- (40) Cab chassis based (includes rescue vehicle, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (47) Other light conventional truck type (not a pickup) (specify): \_\_\_\_\_
- (48) Unknown other light truck type (not a pickup)
- (49) Unknown light vehicle type (automobile, van, or light truck)

### OTHER VEHICLES

#### Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): \_\_\_\_\_

- 
- (59) Unknown bus type

#### Medium/Heavy Trucks ( $>10,000$ lbs GVWR)

- (60) Step van
- (61) Single unit straight truck (10,000 lbs  $<$  GVWR  $\leq 26,000$  lbs)
- (62) Single unit straight truck ( $>26,000$  lbs GVWR)
- (63) Medium/heavy truck based motorhome
- (64) Truck-tractor with no cargo trailer
- (65) Truck-tractor pulling one trailer
- (66) Truck-tractor pulling two or more trailers
- (67) Truck-tractor (unknown if pulling trailer)
- (68) Unknown medium/heavy truck type
- (69) Unknown truck type (light/medium/heavy)

#### Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (70) Motorcycle
- (71) Moped (motorized bicycle)
- (78) Other motored cycle type (minibike, motorscooter) (specify): \_\_\_\_\_

- 
- (79) Unknown motored cycle type

#### Other Vehicles

- (80) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (88) Other vehicle type (specify): \_\_\_\_\_

- 
- (99) Unknown body type

**OCCUPANT RELATED**

16. Driver Presence in Vehicle 1  
 (0) Driver not present  
 (1) Driver present  
 (9) Unknown
17. Number of Occupants This Vehicle 0 2  
 (00-96) Code actual number of occupants for this vehicle  
 (97) 97 or more  
 (99) Unknown
18. Number of Occupant Forms Submitted 0 2

**VEHICLE WEIGHT ITEMS**

19. Vehicle Curb Weight 0 2, 9 0 0  
~~2932~~ Code weight to nearest 100 pounds.  
 (010) Less than 1050 pounds  
 (135) 13,500 lbs or more  
 (999) Unknown  
 Source: MVMA
20. Vehicle Cargo Weight 9, 9 0 0  
 Code weight to nearest 100 pounds.  
 (00) Less than 50 pounds  
 (97) 9,650 lbs or more  
 (99) Unknown

**RECONSTRUCTION DATA**

21. Towed Trailing Unit 0  
 (0) No towed unit  
 (1) Yes—towed trailing unit  
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0  
 (0) No  
 (1) Yes
23. Post Collision Condition of Tree or Pole (for Highest Delta V) 0  
 (0) Not collision (for highest delta V) with tree or pole  
 (1) Not damaged  
 (2) Cracked/sheared  
 (3) Tilted <45 degrees  
 (4) Tilted ≥45 degrees  
 (5) Uprooted tree  
 (6) Separated pole from base  
 (7) Pole replaced  
 (8) Other (specify):  
 \_\_\_\_\_  
 (9) Unknown

24. Rollover 0  
 (0) No rollover (no overturning)  
 Rollover (primarily about the longitudinal axis)  
 (1) Rollover, 1 quarter turn only  
 (2) Rollover, 2 quarter turns  
 (3) Rollover, 3 quarter turns  
 (4) Rollover, 4 or more quarter turns (specify):  
 \_\_\_\_\_  
 (5) Rollover—end-over-end (i.e., primarily about the lateral axis)  
 (9) Rollover (overturn), details unknown

**OVERRIDE/UNDERRIDE (THIS VEHICLE)**

25. Front Override/Underride (this vehicle) 0
26. Rear Override/Underride (this vehicle) 0  
 (0) No override/underride, or not an end-to-end impact  
 Override (see specific CDC)  
 (1) 1st CDC  
 (2) 2nd CDC  
 (3) Other not automated CDC (specify):  
 \_\_\_\_\_  
 Underride (see specific CDC)  
 (4) 1st CDC  
 (5) 2nd CDC  
 (6) Other not automated CDC (specify):  
 \_\_\_\_\_  
 (7) Medium/heavy truck override  
 (9) Unknown

**HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V**

Values: (000)-(359) Code actual value  
 (997) Noncollision  
 (998) Impact with object  
 (999) Unknown

27. Heading Angle for This Vehicle 9 9 8
28. Heading Angle for Other Vehicle 9 9 8





29. Basis for Total Delta V (Highest) 1

Delta V Calculated

- (1) CRASH program – damage only routine
- (2) CRASH program – damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction techniques, regardless of adequacy of damage data.
- (6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

**COMPUTER GENERATED DELTA V**

## 30. Total Delta V

Secondary Highest

8.1 Nearest mph 8.6

(NOTE: 00 means less than  
0.5 mph)  
(97) 96.5 mph and above  
(99) Unknown

## 31. Longitudinal Component of Delta V

-8.6 Nearest mph -8.6

(NOTE: —00 means greater than  
–0.5 and less than +0.5 mph)  
(±97) ±96.5 mph and above  
(—99) Unknown

## 32. Lateral Component of Delta V

Secondary Highest

+1.5 Nearest mph -0.8

(NOTE: —00 means greater than  
–0.5 and less than +0.5 mph)  
(±97) ±96.5 mph and above  
(—99) Unknown

## 33. Energy Absorption

9144.9 Nearest 100 foot-lbs 10125.1

(NOTE: 0000 means less than 50 Foot-Lbs)  
(9997) 999,650 foot-lbs or more  
(9999) Unknown

## 34. Confidence in Reconstruction Program Results (for Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model – results appear reasonable
- (2) Collision fits model – results appear high
- (3) Collision fits model – results appear low
- (4) Borderline reconstruction – results appear reasonable

## 35. Type of Vehicle Inspection

- (0) No Inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), \*\*\*  
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

## EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	_____	3. Vehicle Number	<u>0</u> <u>1</u>
2. Case Number – Stratum	<u>DSI-90-AB-1</u>		

## VEHICLE IDENTIFICATION

VIN W P 0 A B 2 9 4 2 K N [REDACTED] Model Year 1989  
Vehicle Make (specify): PORSCHE Vehicle Model (specify): 944 S2

## LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	① RF BUMPER CORNER	① RF BUMPER CORNER
3	② LF BUMPER CORNER	C-1
2	2" FORWARD OF RR AXLE	2" FORWARD OF RR AXLE
4	14" REAR OF LR AXLE	14" REAR OF LR AXLE

## CRUSH PROFILE

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

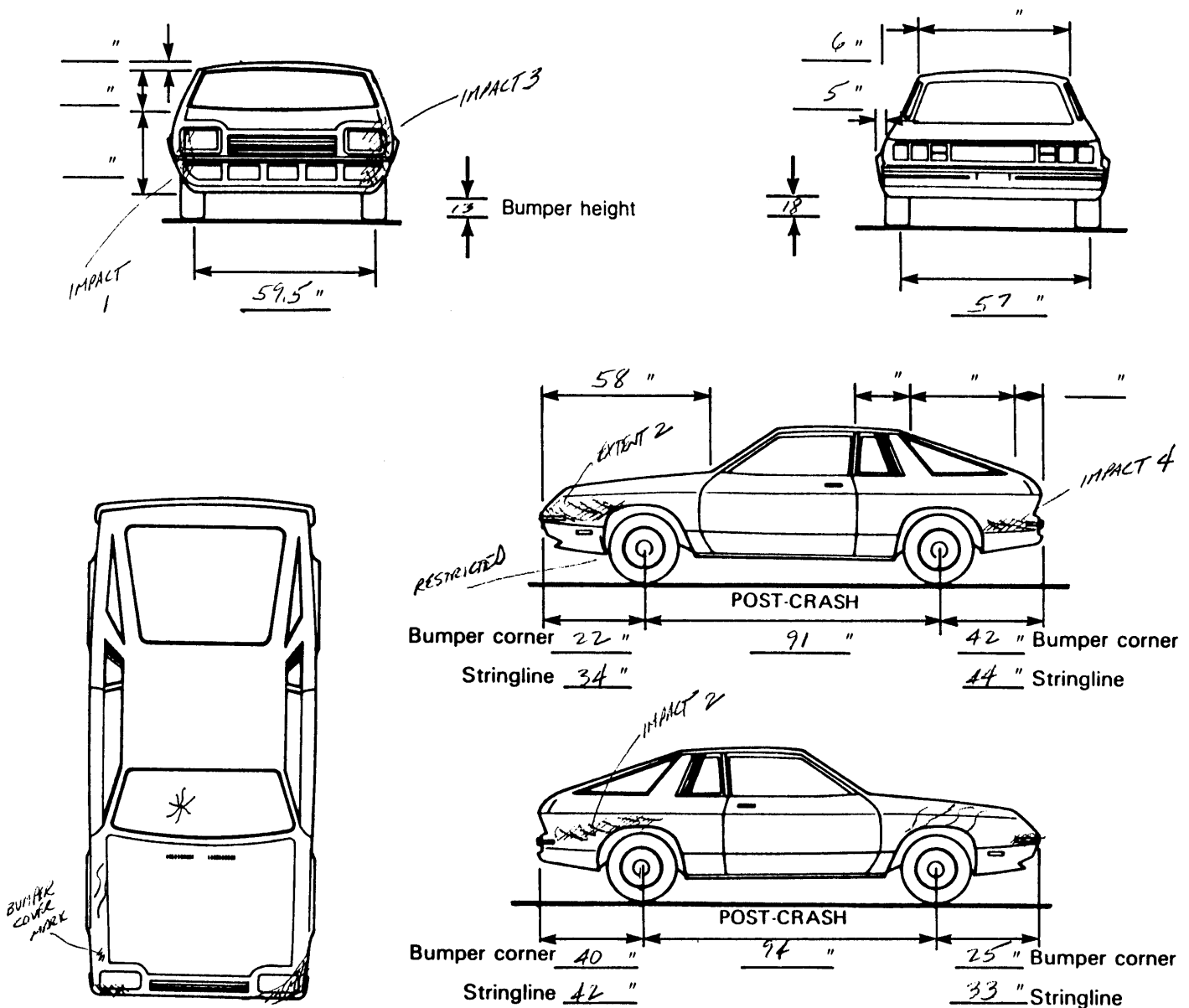
Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

## VEHICLE DAMAGE SKETCH

<b>TIRE—WHEEL DAMAGE</b> a. Rotation physically restricted    b. Tire deflated RF <u>2</u> RF <u>2</u> LF <u>1</u> LF <u>2</u> RR <u>2</u> RR <u>2</u> LR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		<b>ORIGINAL SPECIFICATIONS</b> Wheelbase <u>94.5</u> Overall Length <u>168.9</u> Maximum Width <u>68.3</u> Curb Weight <u>2932</u> Average Track <u>58.2/57.1</u> Front Overhang _____ Rear Overhang _____ Engine Size: cyl./ displ. <u>3.0 L</u> Undeformed End Width <u>58</u>		<b>WHEEL STEER ANGLES</b> (For locked front wheels or displaced rear axles only) RF ± _____° LF ± _____° RR ± _____° LR ± _____° Within ± 5 degrees
<b>TYPE OF TRANSMISSION</b> <input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic		<b>DRIVE WHEELS</b> <input type="checkbox"/> FWD <input checked="" type="checkbox"/> RWD <input type="checkbox"/> 4WD		
		Approximate Cargo Weight _____		



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.  
Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

## CDC WORKSHEET

## CODES FOR OBJECT CONTACTED

## 01-30 – Vehicle Number

## Noncollision

(31) Overturn – rollover

(32) Fire or explosion

(33) Jackknife

(34) Other intraunit damage (specify):  
\_\_\_\_\_

(35) Noncollision injury

(38) Other noncollision (specify):  
\_\_\_\_\_

(39) Noncollision – details unknown

## Collision with Fixed Object

(41) Tree ( $\leq 4$  inches in diameter)(42) Tree ( $> 4$  inches in diameter)

(43) Shrubbery or bush

(44) Embankment

(45) Breakaway pole or post (any diameter)

## Nonbreakaway Pole or Post

(50) Pole or post ( $\leq 4$  inches in diameter)(51) Pole or post ( $> 4$  but  $\leq 12$  inches in diameter)(52) Pole or post ( $> 12$  inches in diameter)

(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier

(55) Impact attenuator

(56) Other traffic barrier (specify):  
\_\_\_\_\_

(57) Fence

(58) Wall

(59) Building

(60) Ditch or Culvert

(61) Ground

(62) Fire hydrant

(63) Curb

(64) Bridge

(68) Other fixed object (specify):  
\_\_\_\_\_

(69) Unknown fixed object

## Collision With Nonfixed Object

(71) Motor vehicle not in transport

(72) Pedestrian

(73) Cyclist or cycle

(74) Other nonmotorist or conveyance (specify):  
\_\_\_\_\_

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(88) Other nonfixed object (specify):  
\_\_\_\_\_

(89) Unknown nonfixed object

(98) Other event (specify):  
\_\_\_\_\_

(99) Unknown event or object

## DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
<u>01</u>	<u>58</u>	<u>005</u>	<u>00</u>	<u>F</u>	<u>R</u>	<u>E</u>	<u>E</u>	<u>02</u>
<u>02</u>	<u>58</u>	<u>010</u>	<u>00</u>	<u>R</u>	<u>B</u>	<u>E</u>	<u>S</u>	<u>01</u>
<u>03</u>	<u>58</u>	<u>350</u>	<u>00</u>	<u>F</u>	<u>L</u>	<u>E</u>	<u>E</u>	<u>02</u>
<u>04</u>	<u>58</u>	<u>355</u>	<u>00</u>	<u>L</u>	<u>B</u>	<u>E</u>	<u>S</u>	<u>01</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

**COLLISION DEFORMATION CLASSIFICATION**

## HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>Φ 3</u>	5. <u>58</u>	6. <u>12</u>	7. <u>F</u>	8. <u>L</u>	9. <u>E</u>	10. <u>E</u>	11. <u>Φ 2</u>

## Second Highest Delta "V"

12. <u>Φ L</u>	13. <u>58</u>	14. <u>12</u>	15. <u>F</u>	16. <u>R</u>	17. <u>E</u>	18. <u>E</u>	19. <u>Φ 1</u>
----------------	---------------	---------------	--------------	--------------	--------------	--------------	----------------

**CRUSH PROFILE**

(The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. ALL MEASUREMENTS ARE IN INCHES.)

## HIGHEST DELTA "V"

20. L	21. C1	C2	C3	C4	C5	C6	22. + - D
<u>Φ 58</u>	<u>Φ 5</u>	<u>Φ 3</u>	<u>Φ 3</u>	<u>Φ 2</u>	<u>Φ 1</u>	<u>Φ 1</u>	<u>Φ 22</u>

## Second Highest Delta "V"

23. L	24. C1	C2	C3	C4	C5	C6	25. + - D
---	---	---	---	---	---	---	---

26. Are CDCs Documented but Not Coded on The Automated File  
(0) No  
(1) Yes

1

27. Researcher's Assessment of Vehicle Disposition  
(0) Not towed due to vehicle damage  
(1) Towed due to vehicle damage  
(9) Unknown

1

28. Original Wheelbase  
Code to the nearest tenth of an inch  
(9999) Unknown

Φ 94.5

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED \*\*\*  
(I.E., GV09 = 0 OR 9), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



# INTERIOR VEHICLE FORM

1. Primary Sampling Unit Number

2. Case Number—Stratum

DSI-90-AB-1

3. Vehicle Number

41

## INTEGRITY

4. Passenger Compartment Integrity

45

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (rear)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

PER INTERVIEWEE

Door, Tailgate Or Hatch Opening

5. LF 1 6. RF 1 7. LR 0 8. RR 0 9. TG/H 1

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then Code 0.

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate, or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

## GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 0

20. BL 0 21. Roof 9 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 2 24. LF 0 25. RF 0 26. LR 0 27. RR 0

28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage **And** No Occupant Contact or No Glazing, Then Code IV 31 Through IV 46 As 0

Type of Window/Windshield Glazing

31. WS 1 32. LF 0 33. RF 0 34. LR 0 35. RR 0

36. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 — Laminated

(2) AS-2 — Tempered

(3) AS-3 — Tempered-tinted

(4) AS-14 — Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

39. WS 1 40. LF 0 41. RF 0 42. LR 0 43. RR 0

44. BL 0 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

(2) Closed

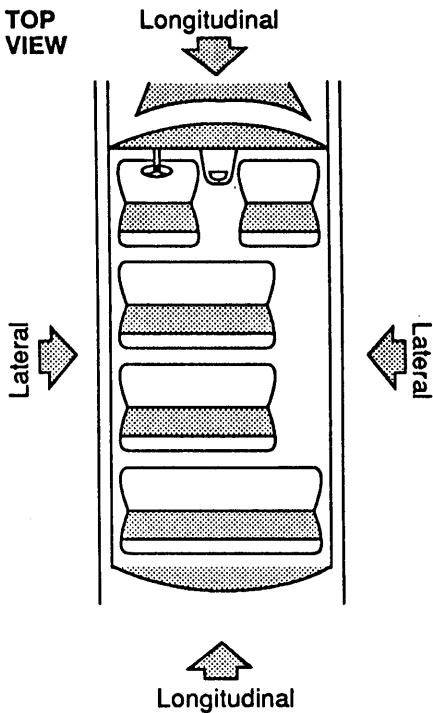
(3) Partially opened

(4) Fully opened

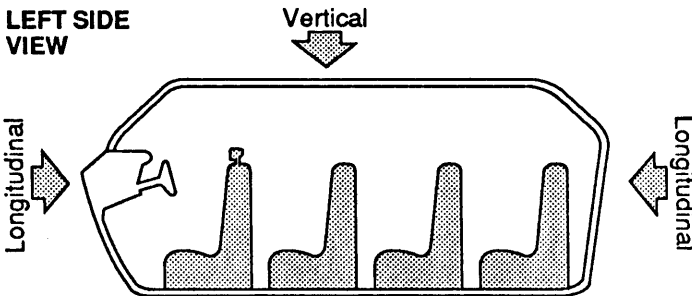
(9) Unknown

INTRUSION WORK SHEET

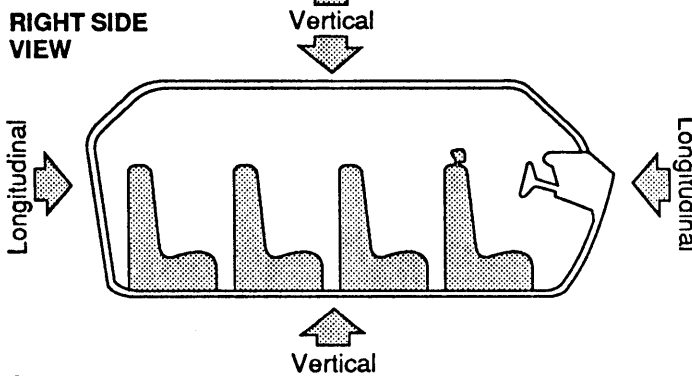
TOP  
VIEW



LEFT SIDE  
VIEW



RIGHT SIDE  
VIEW



Note: Sketch intruded areas

LOCATION OF INTRUSION	INTRUDED COMPONENT	COMPARISON VALUE	—	INTRUDED VALUE	=	INTRUSION	DOMINANT CRUSH DIRECTION
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		



**OCCUPANT AREA INTRUSION**

Note: If no intrusions, leave variables IV 47-IV 86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47. _____	48. _____	49. _____	50. _____
2nd	51. _____	52. _____	53. _____	54. _____
3rd	55. _____	56. _____	57. _____	58. _____
4th	59. _____	60. _____	61. _____	62. _____
5th	63. _____	64. _____	65. _____	66. _____
6th	67. _____	68. _____	69. _____	70. _____
7th	71. _____	72. _____	73. _____	74. _____
8th	75. _____	76. _____	77. _____	78. _____
9th	79. _____	80. _____	81. _____	82. _____
10th	83. _____	84. _____	85. _____	86. _____

**LOCATION OF INTRUSION**

Front Seat  
 (11) Left  
 (12) Middle  
 (13) Right

Second Seat  
 (21) Left  
 (22) Middle  
 (23) Right

Third Seat  
 (31) Left  
 (32) Middle  
 (33) Right

Fourth Seat  
 (41) Left  
 (42) Middle  
 (43) Right

(97) Catastrophic  
 (98) Other enclosed area (specify): \_\_\_\_\_

(99) Unknown

None**INTRUDING COMPONENT****Interior Components**

- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back panel or door surface
- (26) Other interior component (specify): \_\_\_\_\_

- (27) Side panel - forward of the A-pillar
- (28) Side panel - rear of the A-pillar

**Exterior Components**

- (30) Hood
- (31) Outside surface of vehicle (specify): \_\_\_\_\_
- (32) Other exterior object in the environment (specify): \_\_\_\_\_
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): \_\_\_\_\_
- (99) Unknown

**MAGNITUDE OF INTRUSION**

- (1)  $\geq 1$  inch but  $< 3$  inches
- (2)  $\geq 3$  inches but  $< 6$  inches
- (3)  $\geq 6$  inches but  $< 12$  inches
- (4)  $\geq 12$  inches but  $< 18$  inches
- (5)  $\geq 18$  inches but  $< 24$  inches
- (6)  $\geq 24$  inches
- (7) Catastrophic
- (9) Unknown

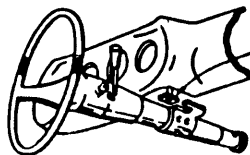
**DOMINANT CRUSH DIRECTION**

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

# STEERING COLUMN WORKING DIAGRAMS

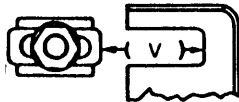
## STEERING COLUMN COLLAPSE

Steering Column Shear Module Movement



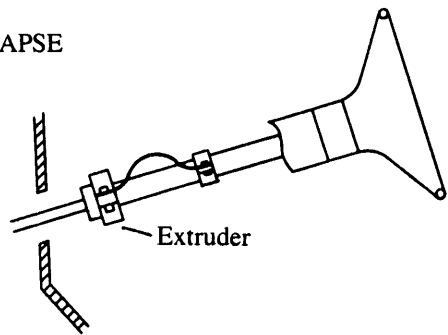
SHEAR CAPSULE

Left —



Right — V = ———"

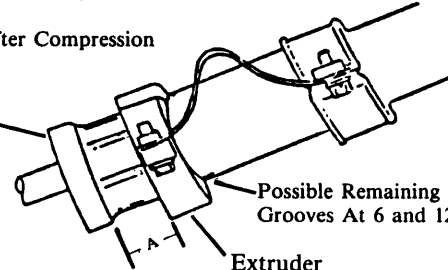
Direction and Magnitude of Steering Column Movement



Extruder

After Compression

Flare Tube



Possible Remaining Starter Grooves At 6 and 12 o'clock

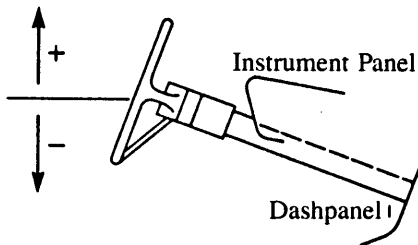
Extruder

Compression = Measurement A

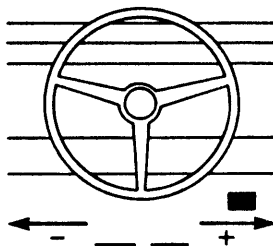
A = ———

## STEERING COLUMN MOVEMENT

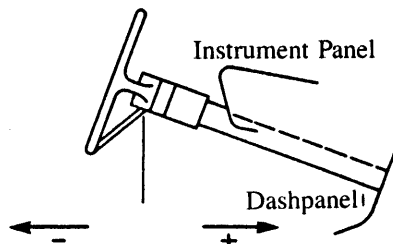
Vertical Movement



Lateral Movement



Longitudinal Movement



	COMPARISON VALUE	—	DAMAGED VALUE	=	MOVEMENT
VERTICAL		—		=	
LATERAL		—		=	
LONGITUDINAL		—		=	

## STEERING RIM/SPOKE DEFORMATION

COMPARISON VALUE	—	DAMAGED VALUE	=	DEFORMATION
	—		=	
	—		=	

## National Accident Sampling System—Crashworthiness Data System: Interior Vehicle Form

Page 3

## STEERING COLUMN

87. Steering Column Type 1

- (1) Fixed column  
 (2) Tilt column  
 (3) Telescoping column  
 (4) Tilt and telescoping column  
 (8) Other column type (specify):  
 \_\_\_\_\_

(9) Unknown

If PDOF  $\neq$  11, 12 or 1, Then Code IV88-IV91 As 9688. Steering Column Collapse Due to Occupant Loading 99

\_\_\_\_\_ Code actual measured movement to the nearest inch. See coding manual for measurement technique(s).

(00) No movement, compression, or collapse

(01-19) Actual measured value

(20) 20 inches or greater

Estimated movement from observation

(81) Less than 1 inch

(82)  $\geq$  1 inch but  $<$  2 inches(83)  $\geq$  2 inches but  $<$  4 inches(84)  $\geq$  4 inches but  $<$  6 inches(85)  $\geq$  6 inches but  $<$  8 inches

(86) Greater than or equal to 8 inches

(96) Not assessed (PDOF  $\neq$  11, 12, 1)

(97) Apparent movement, value undetermined or cannot be measured or estimated

(98) Nonspecified type column

(99) Unknown

## Direction And Magnitude of Steering Column Movement

89. Vertical Movement + 0090. Lateral Movement + 0091. Longitudinal Movement + 99

Code the actual measured movement to the nearest inch. See Coding Manual for measurement technique(s)

(00) No steering column movement

( $\pm 01 - \pm 49$ ) Actual measured value( $\pm 50$ ) 50 inches or greater

Estimated movement from observation

( $\pm 81$ )  $\geq$  1 inch but  $<$  3 inches( $\pm 82$ )  $\geq$  3 inches but  $<$  6 inches( $\pm 83$ )  $\geq$  6 inches but  $<$  12 inches( $\pm 84$ )  $\geq$  12 inches(—96) Not assessed (PDOF  $\neq$  11, 12, 1)(—97) Apparent movement  $>$  1 inch but cannot be measured or estimated

(—99) Unknown

92. Steering Rim/Spoke Deformation 0

\_\_\_\_\_ Code actual measured deformation to the nearest inch.

(0) No steering rim deformation

(1-5) Actual measured value

(6) 6 inches or more

(8) Observed deformation cannot be measured

(9) Unknown

93. Location of Steering Rim/Spoke Deformation 00

(00) No steering rim deformation

Quarter Sections

(01) Section A

(02) Section B

(03) Section C

(04) Section D



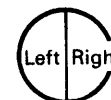
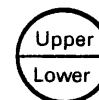
Half Sections

(05) Upper half of rim/spoke

(06) Lower half of rim/spoke

(07) Left half of rim/spoke

(08) Right half of rim/spoke



(09) Complete steering wheel collapse

(10) Undetermined location

(99) Unknown

## INSTRUMENT PANEL

94. Odometer Reading 010,000

009,649 miles—Code mileage to the nearest 1,000 miles

(000) No odometer

(001) Less than 1,500 miles

(300) 299,500 miles or more

(999) Unknown

Source: Vehicle inspection95. Instrument Panel Damage from Occupant Contact? 0

(0) No

(1) Yes

(9) Unknown

96. Knee Bolsters Deformed from Occupant Contact? 0

(0) No

(1) Yes

(8) Not present

(9) Unknown

97. Did Glove Compartment Door Open During Collision(s)? 0

(0) No

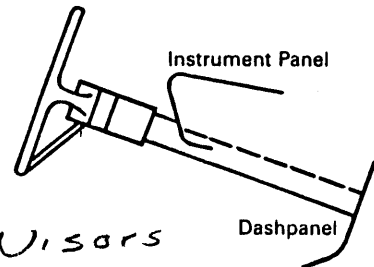
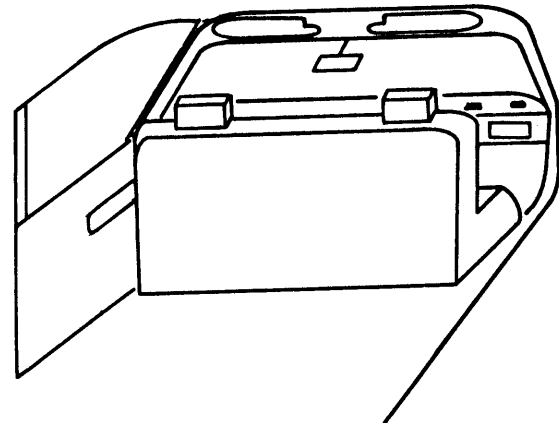
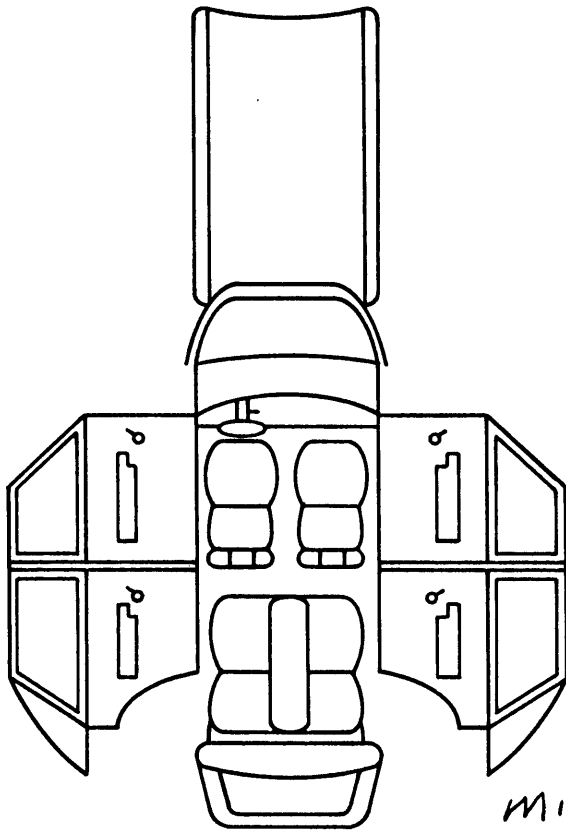
(1) Yes

(8) Not present

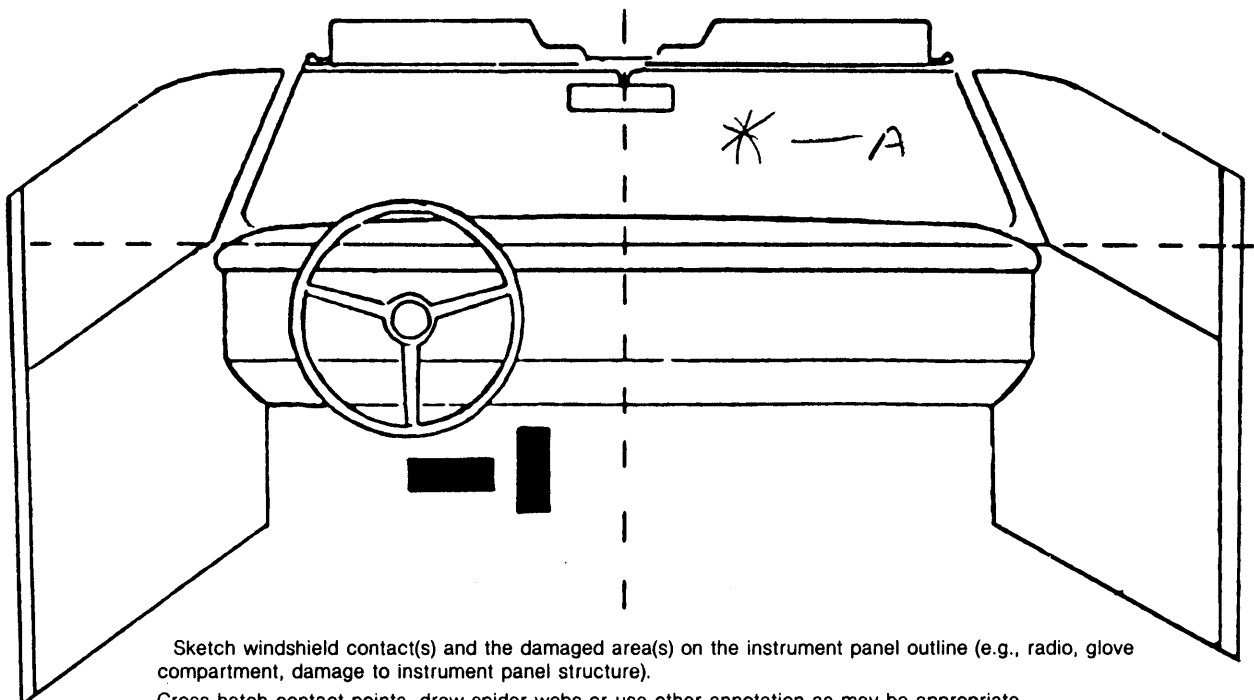
(9) Unknown

## VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Mirror & Visors  
Removed after accident.



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

## POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	01	2	Head	Skin oil around	1
B				Crack	
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

## CODES FOR INTERIOR COMPONENTS

## FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

## LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_

- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

## RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

## INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects

- (48) Child safety seat (specify): \_\_\_\_\_

- (49) Other interior object (specify): \_\_\_\_\_

## ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

## FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

## REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

## CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (4) Unknown

## AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	Availability	/	/	/
	Function	4	/	4
	Failure	/	/	/

### Automatic (Passive) Restraint System Availability

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_
- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

### Automatic (Passive) Restraint Function

- (0) Not equipped/not available

#### Automatic Belt

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

#### Air Bag

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

### Did Automatic (Passive) Restraint Fail

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_
- (9) Unknown

**MANUAL RESTRAINTS**

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
F I R S T	Availability	4	0	4
	Use	04	0	00
	Failure Modes	1	0	0
S E C O N D	Availability	4	0	4
	Use	00	0	00
	Failure Modes	0	0	0
T H I R D	Availability			
	Use			
	Failure Modes			
O T H E R	Availability			
	Use			
	Failure Modes			

**Manual (Active) Belt System Availability**

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available – type unknown
- (8) Other belt (specify):

(9) Unknown

**Manual (Active) Belt System Use**

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used – type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat – type unknown
- (18) Other belt used with child safety seat (specify):

(99) Unknown if belt used

**Manual (Active) Belt Failure Modes During Accident**

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):

- (6) Broken retractor
- (7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

## CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

### 1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):  
\_\_\_\_\_

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

### 2. Child Safety Seat Orientation

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (03) Other orientation (specify):  
\_\_\_\_\_

- (04) Unknown orientation

- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):  
\_\_\_\_\_

- (19) Unknown orientation

- Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):  
\_\_\_\_\_

- (29) Unknown orientation

- (99) Unknown if child safety seat used

### 3. Child Safety Seat Harness Usage

### 4. Child Safety Seat Shield Usage

### 5. Child Safety Seat Tether Usage

Note: Options Below Are Used for Variables 3-5.

- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown if Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

### 6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

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**HEAD RESTRAINTS/SEAT EVALUATION**

NOTES: Encode the applicable data for **each seat position** in the vehicle. The attributes for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	Head Restraint Type/Damage	1	0	1
	Seat Type	02	0	02
	Seat Performance	1	0	1
S E C O N D	Head Restraint Type/Damage	0	0	0
	Seat Type	05	05	05
	Seat Performance	1	1	1
T H I R D	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
O T H E R	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			

**Head Restraint Type/Damage by Occupant at This Occupant Position**

- (0) No head restraints
- (1) Integral – no damage
- (2) Integral – damaged during accident
- (3) Adjustable – no damage
- (4) Adjustable – damaged during accident
- (5) Add-on – no damage
- (6) Add-on – damaged during accident
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

**Seat Performance (This Occupant Position)**

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): \_\_\_\_\_

**Seat Type (This Occupant Position)**

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify): \_\_\_\_\_
- (99) Unknown

- (7) Combination of above (specify): \_\_\_\_\_
- (8) Other (specify): \_\_\_\_\_

- (9) Unknown

**DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E. UNUSUAL OCCUPANT CONTACT PATTERN)**


**EJECTION/ENTRAPMENT DATA**

Complete the following if the researcher has any indications that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

**EJECTION** No ☒ Yes ☐

Describe indications of ejection and body parts involved in partial ejection(s):

---



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---

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

**Ejection**

- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

**Ejection Area**

- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear

**(7) Roof**

- (8) Other area (e.g., back of pickup, etc.) (specify):

(9) Unknown

**Ejection Medium**

- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify):

**(5) Integral structure**

- (8) Other medium (specify):

(9) Unknown

**Medium Status (Immediately Prior to Impact)**

- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

**ENTRAPMENT** No ☒ Yes ☐

Describe entrapment mechanism:

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Component(s):

---

(Note in vehicle interior diagram)



## INTERVIEW FORM

Primary Sampling Unit Number \_\_\_\_\_ Interviewee(s) Role(s) or Name(s) \_\_\_\_\_

Case Number—Stratum DSI-90-AB-1 DRIVER / FATHER OF DRIVER (1<sup>ST</sup>)

Vehicle Number 01 L (2<sup>ND</sup>)

Review the Interview Cue Sheet prior to conducting interview(s) to ensure the acquisition of all pertinent data.

### GENERAL DESCRIPTION OF ACCIDENT SEQUENCE

FATHER INDICATED A LEFTSIDE IMPACT FIRST, BUT  
SAID SON WOULD KNOW BETTER

"I WAS TRAVELLING SOUTHBOUND IN THE LEFT LANE AT APPROXIMATELY  
50 MPH. I WAS GOING THROUGH BATTERY TUNNEL WHEN A CAR  
ON MY RIGHT CHANGED LANES TO THE LEFT. I TRIED TO AVOID V/L  
BY STEERING RIGHT. I WENT ACROSS THE RIGHT LANE AND STRUCK  
THE RIGHT SIDE TUNNEL WALL. I WAS TRYING TO REGAIN CONTROL  
AND THEN I WENT BACK TO THE LEFT AND STRUCK THE LEFT SIDE  
TUNNEL WALL.

THE AIRBAG POPPED OUT BUT DID NOT INFLATE.

[POSSIBLY "SEATTLE"  
SLURRED]

### SPECIFIC QUESTIONS

I DID NOT HIT THE OTHER CAR.

ACCIDENT WAS INVESTIGATED BY [REDACTED] POLICE DEPT.

I WAS FACING SOUTHBOUND WHEN I CAME TO FINAL REST. THE AIRBAG  
APPARENTLY BLEW OUT THE SUN ROOF. THE AIRBAG DID NOT BALLOON OUT.

ACC. DATE: [REDACTED]/90 ENGINEERS FROM PORSCHE CHECKED OUT THE AIRBAG FUNCTION  
TIME: 0200 AND THEY FOUND IT WAS (DID) WORK PROPERLY.

Key to Researcher: Have you obtained the following through the interviewee(s) description and specific questions?

- |   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> PRE-CRASH, AT IMPACT<br>vehicle travel/driver intention | <input checked="" type="checkbox"/> Speed estimates (precrash/at<br>impact) | <input type="checkbox"/> Previous vehicle damage           |
| <input checked="" type="checkbox"/> Direction of travel                                     | <input checked="" type="checkbox"/> Post-impact trajectory                  | <input type="checkbox"/> Glazing type                      |
| <input checked="" type="checkbox"/> Avoidance maneuvers                                     | <input type="checkbox"/> Door status (precrash/postcrash)                   | <input checked="" type="checkbox"/> Vehicle glazing status |
| <input checked="" type="checkbox"/> Impact description/orientation                          | <input checked="" type="checkbox"/> Final rest position                     | <input checked="" type="checkbox"/> PAR clarifications     |
|   |   | <input checked="" type="checkbox"/> Glove box status       |

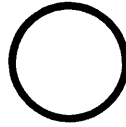
Cargo? No ☒ Yes ☐ Interviewee's Estimated Cargo Weight \_\_\_\_\_

Description of Cargo \_\_\_\_\_

Present Location of Vehicle (if not yet inspected)? NA

FATHER INDICATED THAT HE WAS UNHAPPY W/ PERFORMANCE OF AB SYSTEM AND WAS  
CONSIDERING LEGAL ACTION (MIGHT COST TOO MUCH, THOUGH) — DAUGHTER WAS  
HURT — STRUCK WINDSHIELD,

## ACCIDENT DIAGRAM



NORTH

The use of this diagram is *optional*. It may serve to aid in relating interviewee accident trajectory data (i.e. pre-impact to FRP orientations) to identifiable objects in the environment.

## OCCUPANT DATA

Enter the occupant's seat position in the first row and complete the column below it using the information from the interviewee(s).

SEAT POSITION	11	13		
AGE/SEX	26/M	21/F		
HEIGHT (IN.)	5'7	5'2		
WEIGHT (LBS.)	135	~ 110		
POSTURE	NORMAL	NORMAL		
EJECTED? [ <input checked="" type="checkbox"/> No [ ] Yes		NO		
DESCRIBE THE EJECTION				
ENTRAPPED? [ <input checked="" type="checkbox"/> No [ ] Yes		NO		
DESCRIBE ENTRAPMENT				
TYPE OF RESTRAINT AVAILABLE?	3 PT <sup>1</sup> / <sub>2</sub> AIRBAG	3 PT <sup>1</sup> / <sub>2</sub> AIRBAG		
HOW WERE THE BELTS WORN?	NORMAL	NORMAL		
DESCRIBE ANY RESTRAINT FAILURE MODE	NONE	NONE		
TYPE OF TREATMENT	HE TOOK HIMSELF THE NEXT DAY TO SEE HIS DOCTOR.	SHE WENT THE NEXT DAY TO DOCTOR		
DAYS IN HOSPITAL?	0	0		
NO. OF LOST WORK DAYS?	1	1		

# OCCUPANT DATA

SEAT POSITION				
AGE/SEX				
HEIGHT (IN.)				
WEIGHT (LBS.)				
POSTURE				
EJECTED? [ ] No [ ] Yes				
DESCRIBE THE EJECTION				
ENTRAPPED? [ ] No [ ] Yes				
DESCRIBE ENTRAPMENT				
TYPE OF RESTRAINT AVAILABLE?				
HOW WERE THE BELTS WORN?				
DESCRIBE ANY RESTRAINT FAILURE MODE				
TYPE OF TREATMENT				
DAYS IN HOSPITAL?				
NO. OF LOST WORK DAYS?				

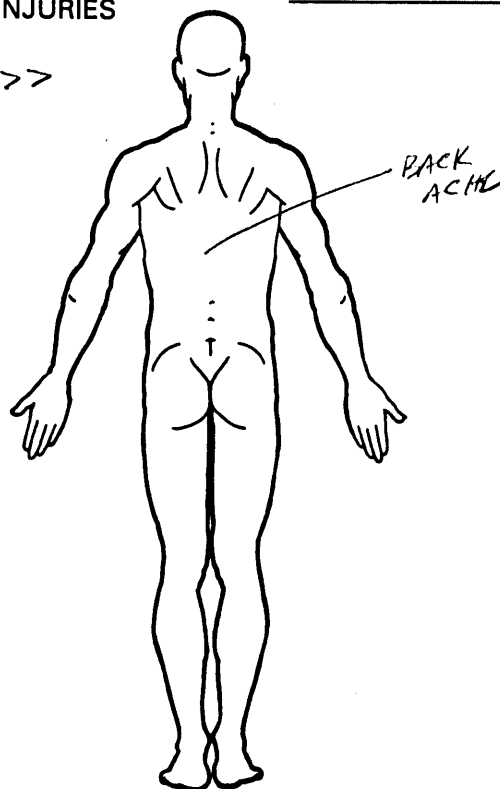
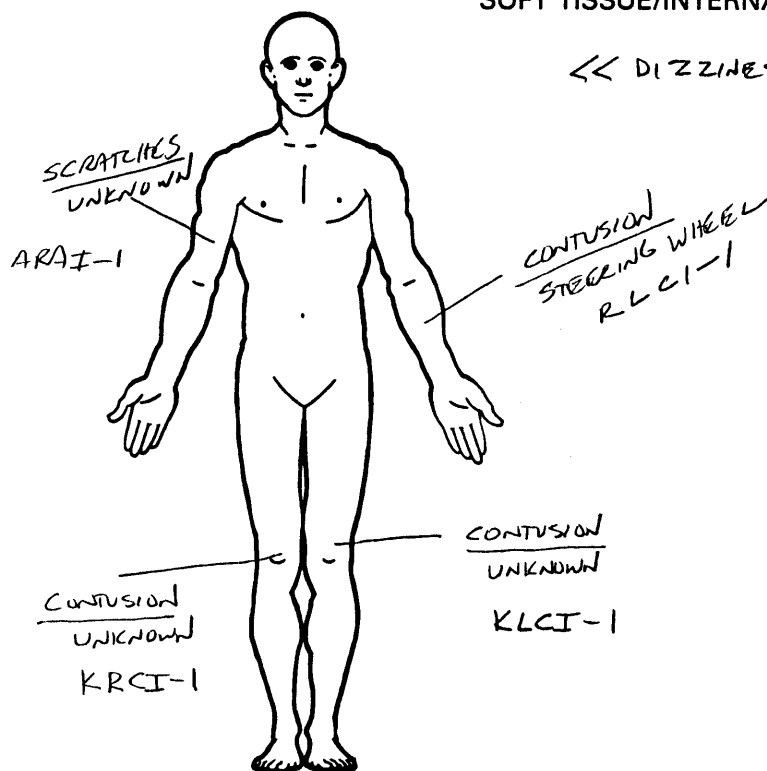
PSU Number \_\_\_\_\_ Case Number—Stratum \_\_\_\_\_ Vehicle Number 01 Occupant Number 01

## INJURY DATA FROM INTERVIEWEE(S)

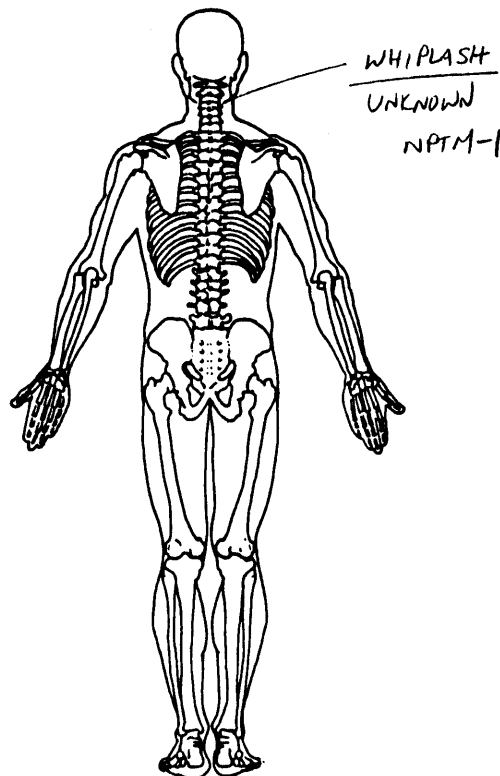
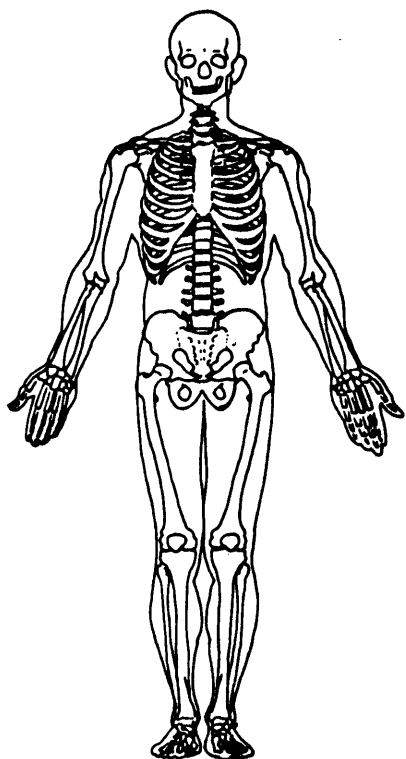
Indicate the Location, Lesion, Detail, and Source of all injuries. Specify interviewee(s): DRIVER

## SOFT TISSUE/INTERNAL INJURIES

&lt;&lt; DIZZINESS &gt;&gt;



## SKELETAL INJURIES



The space provided on the back of this page may be used to document injuries noted by the interviewee(s).

### OCCUPANT INJURY DATA

Indicate the *Location, Lesion, Detail*, and *Source* of all injuries indicated by the interviewee(s).

[illegible]

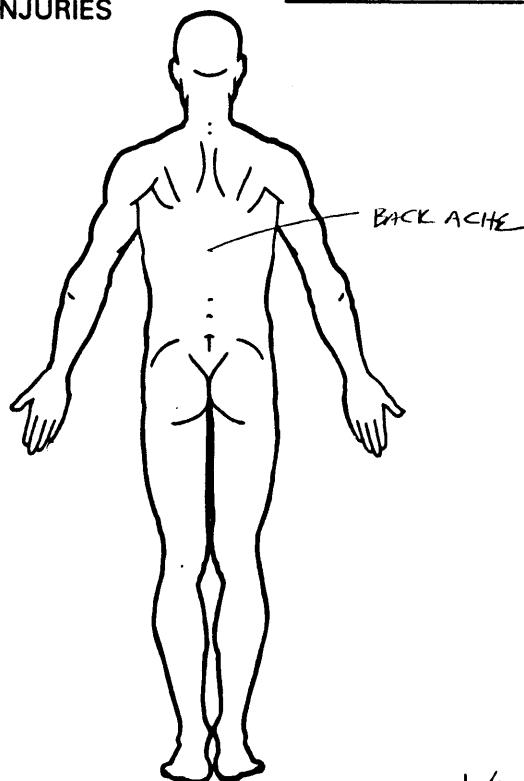
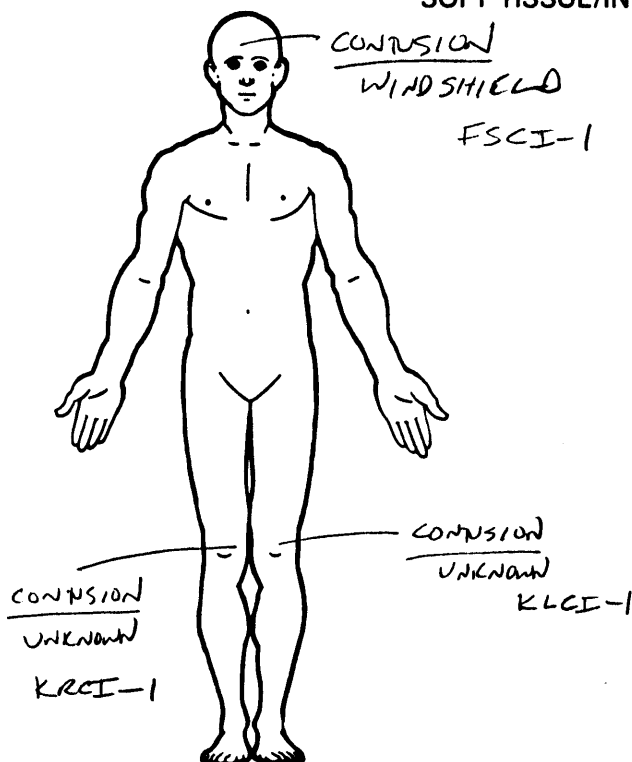


PSU Number \_\_\_\_\_ Case Number—Stratum \_\_\_\_\_ Vehicle Number 01 Occupant Number 02

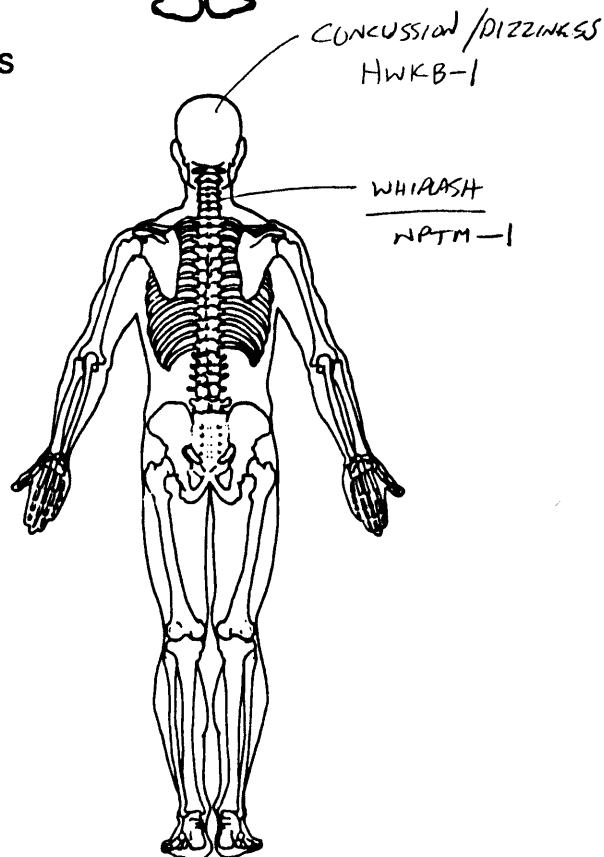
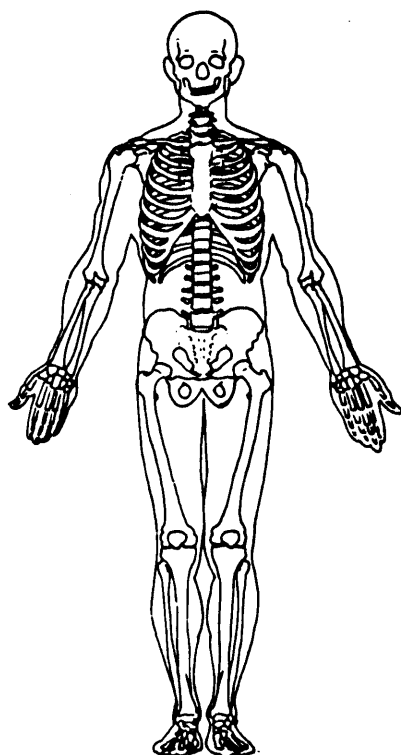
## INJURY DATA FROM INTERVIEWEE(S)

Indicate the Location, Lesion, Detail, and Source of all injuries. Specify interviewee(s): Driver

## SOFT TISSUE/INTERNAL INJURIES



## SKELETAL INJURIES



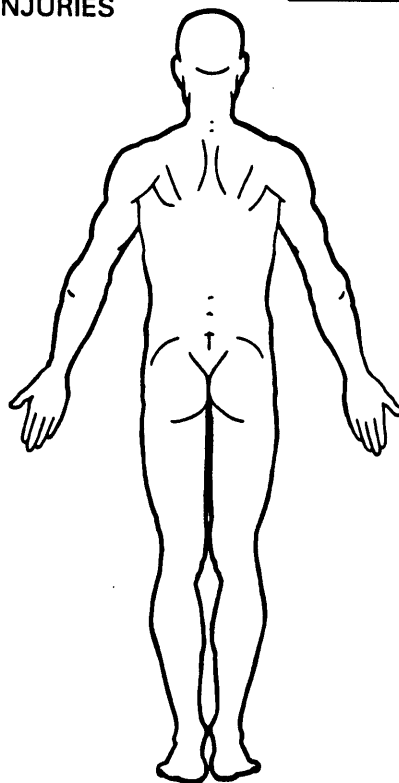
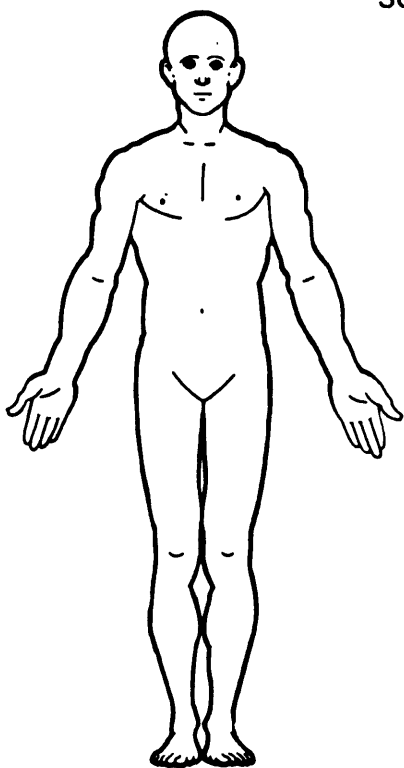
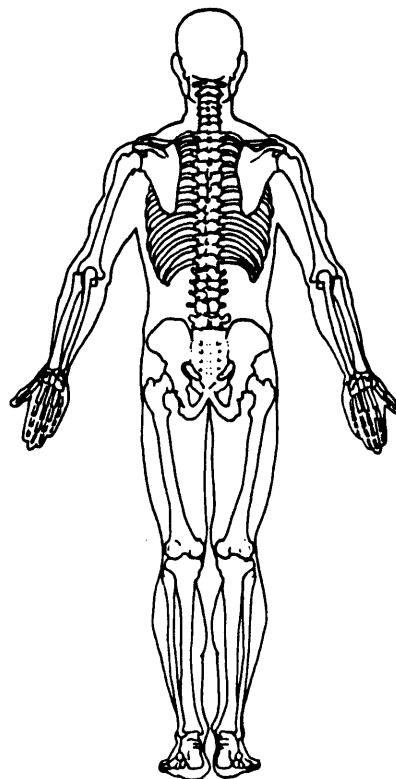
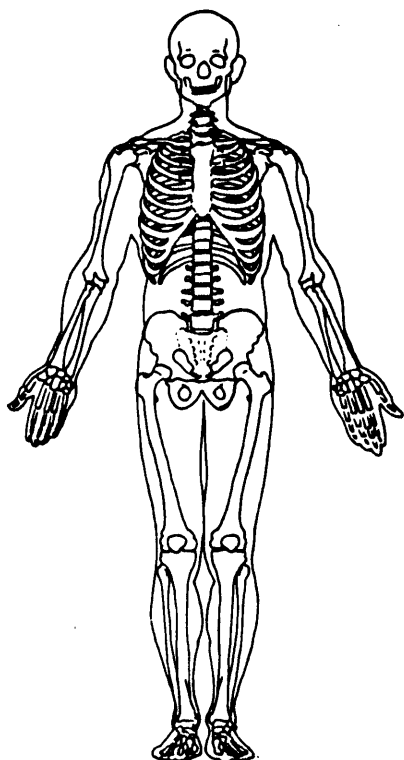
The space provided on the back of this page may be used to document injuries noted by the interviewee(s).

### OCCUPANT INJURY DATA

Indicate the *Location, Lesion, Detail*, and *Source* of all injuries indicated by the interviewee(s).

[illegible]

PSU Number \_\_\_\_\_ Case Number—Stratum \_\_\_\_\_ Vehicle Number \_\_\_\_\_ Occupant Number \_\_\_\_\_

**INJURY DATA FROM INTERVIEWEE(S)**Indicate the *Location, Lesion, Detail, and Source* of all injuries. Specify interviewee(s): \_\_\_\_\_**SOFT TISSUE/INTERNAL INJURIES****SKELETAL INJURIES**

The space provided on the back of this page may be used to document injuries noted by the interviewee(s).

## OCCUPANT INJURY DATA

Indicate the *Location, Lesion, Detail*, and *Source* of all injuries indicated by the interviewee(s).

[illegible]

# AIRBAG SUPPLEMENT

1

## ACCIDENT SUMMARY

1. Accident Date: [REDACTED] 1/90

2. Police Investigated

- (1) Yes  
(2) No  
(3) Unknown

Agency: [REDACTED] PD  
City: [REDACTED]  
County: [REDACTED]

NO RECORD  
FOUND PER  
SIATLE PD &  
FALS

3. General Locality

- (1) Freeway, Limited Access  
(2) Urban (City)  
(3) Urban-Rural (mixed)  
(4) Rural, Fields

4. Configuration (First Harm)

- (0) Struck Object or Ped  
(1) Rear-End  
(2) Head-On  
(3) Rear-to-Rear  
(4) Angle  
(5) Sideswipe-Same Direction  
(6) Sideswipe-Opposite Dir.  
(7) Noncollision  
(8) Nonimpact Deployment  
(9) Unknown

5. Fire Involved

- (0) None  
(1) Airbag Vehicle  
(2) Other Vehicle  
(3) Both Vehicles  
(9) Unknown

6. Vehicles Involved

7. Persons Involved

8. Injured Persons

9. Maximum AIS in Accident

## AIRBAG VEHICLE INSPECTION

10. Date Vehicle Inspected: [REDACTED] 1/90

11. Reason Vehicle Note Inspected

- (0) Not Required  
(1) Inspection Completed  
(2) Cannot be Located  
(3) Repaired or Destroyed  
(5) Refusal or Impounded  
(7) Other:

12. Impact Data Obtained

- (0) No Data Obtained  
(1) CDC Only  
(2) Crush Profile Only  
(3) Trajectory Data Only  
(4) CDC and Crush Profile  
(5) CDC and Trajectory  
(6) Crush and Trajectory  
(7) CDC, Crush, and Trajectory

13. Basis of Delta-V

- (0) Not Computed (Unknown why)  
(1) CRASH - Damage Only  
(2) CRASH - Damage + Traj  
(3) OLDNISS  
(4) POLES  
(5) Unknown Basis  
(6) One Vehicle Beyond Scope  
(7) Collision Beyond Scope  
(8) Insufficient Data

## VEHICLE HISTORY

14. Prior Impacts for AB Vehicle?

- (1) Yes  
(2) No  
(9) Unknown

15. Prior AB Maintenance or Service

- (1) Yes, (2) No, (9) Unknown

Describe:

**AIRBAG SUPPLEMENT**

2

**AIRBAG VEHICLE**

Fleet:

VIN:

Mileage:

N/A

**SYSTEM READINESS LAMP**

16. Pre-Impact Lamp Condition 9  
(1) Functioning/Proved Out  
(2) Inoperative  
(9) Unknown
17. Driver's Report of Pre-Impact Flashing 99  
(00) No Flashing Reported  
(01) Continuous Flashing  
(02) \_\_\_\_\_  
Number of Flashes: \_\_\_\_\_  
(11) \_\_\_\_\_  
(12) Constant Light  
(19) Flashing, Unknown Number  
(88) Not Applicable, System Removed  
(99) Unknown
18. Period of Pre-Impact Flashing 9  
(0) No Flashing  
(1) Same Day as Impact  
(2) Prior Day  
(3) Prior Two Days  
(4) Prior Week  
(5) Prior Month  
(6) Over One Month  
(9) Unknown
19. Post-Impact Lamp Condition 9  
(1) Functioning/Proved Out  
(2) Inoperative  
(9) Unknown
20. Post-Impact Flashing 99  
(00) No Flashing Reported  
(01) Continuous Flashing  
(02) \_\_\_\_\_  
Number of Flashes: \_\_\_\_\_  
(11) \_\_\_\_\_  
(12) Constant Light  
(19) Flashing, Unknown Number  
(88) Not Applicable, System Removed  
(99) Unknown

21. Airbag Vehicle First Harmful Event 40

- (01) Fire or explosion  
(02) Immersion  
(03) Gas Inhalation  
(04) Fell from vehicle  
(05) Injured in vehicle  
(06) Other noncollision (specify):  
(07) Overturn  
(08) Jackknife  
COLLISION WITH:  
(09) Pedestrian  
(10) Pedalcyclist  
(11) Railway train  
(12) Animal  
(13) Motor vehicle in transport  
(same roadway)  
(14) Motor vehicle in transport  
(other roadway)  
(15) Parked motor vehicle  
(16) Other type nonmotorist (specify):  
(17) Thrown or falling object  
(18) Boulder  
COLLISION WITH FIXED OBJECT  
(20) Building  
(21) Impact attenuator/crash cushion  
(22) Bridge pier or abutment  
(23) Bridge parapet end  
(24) Bridge rail  
(25) Guardrail  
(26) Concrete traffic barrier  
(27) Median barrier  
(28) Other longitudinal barrier (specify):  
(29) Highway/traffic sign post  
(30) Overhead sign support  
(31) Luminaire/light support  
(32) Utility pole  
(33) Other post, pole, or support  
(34) Culvert  
(35) Curb  
(36) Ditch  
(37) Embankment-earth  
(38) Embankment-rock, stone, or concrete  
(39) Fence  
(40) Wall  
(41) Fire hydrant  
(42) Shrubbery  
(43) Tree  
(44) Other fixed object (specify):  
(45) Pavement surface irregularity  
(99) Unknown

**AIRBAG SUPPLEMENT**

3

**AIRBAG VEHICLE IMPACT SUMMARY**

22. Vehicle Role /
- (0) Noncollision
  - (1) Striking unit
  - (2) Struck unit
  - (3) Both striking and struck
  - (9) Unknown

23. Manner of Leaving Scene 2
- (1) Driven
  - (2) Towed-due to damage
  - (3) Towed-not for damage
  - (4) Towed-details unknown
  - (5) Abandoned
  - (9) Unknown

24. Number of Impact Events 4
- (8) 8 or more
  - (9) Unknown

25. Rollover φ
- (0) No rollover
  - (1) First event
  - (2) Subsequent event
  - (3) Yes, Unknown event
  - (9) Unknown

26. Override/Underride φ
- (0) No override/underride
  - (1) Override - 1st CDC
  - (2) Override - Other CDC
  - (3) Underride - 1st CDC
  - (4) Underride - Other CDC
  - (9) Unknown

**AIRBAG VEHICLE DAMAGE**

CODES: (1) Yes, (2) No, (9) Unknown

27. Left Front Fender Damage /

28. Right Front Fender Damage /

29. Center Top of Grille Damage 2

**FRONT BUMPER E.A. STATUS**

30. Left 9

31. Right 9
- (1) Normal
  - (2) Extended
  - (3) Partial Compression
  - (4) Complete Compression
  - (5) Not Applicable
  - (9) Unknown

**FIRST AIRBAG VEHICLE IMPACT:**

32. Configuration φ
- (0) Struck Object or Ped
  - (1) Rear-End
  - (2) Head-On
  - (3) Rear-to-Rear
  - (4) Angle
  - (5) Sideswipe-Same Direction
  - (6) Sideswipe-Opposite Dir.
  - (7) Noncollision
  - (8) Nonimpact Deployment
  - (9) Unknown

33. CDC:

34. Object Contacted:

12 FLEE 1.  
WALL**PRIMARY/DEPLOYMENT IMPACT:**

35. Event Number /

36. Total Delta-V 29

37. Longitudinal Delta-V 28.4

38. Configuration φ

See 32 above for codes

39. CDC:

40. Object Contacted:

12 FLEE 1.  
WALL

## AIRBAG SUPPLEMENT

4

### AIRBAG SYSTEM DAMAGE

- CODES: (1) Yes, Damaged  
(2) No, Intact  
(3) Not Applicable  
(9) Unknown

41. Airbag Module

☐ 2

42. Left Front Sensor

☐ 2

43. Center Front Sensor

☐ 2

44. Right Front Sensor

☐ 2

45. Rear Cowl Sensor

☐ 2

46. Diagnostic Module

☐ 2

47. Wiring

☐ 2

48. Knee Diverter

☐ 2

49. Indication of disconnected  
or loose electrical  
connectors

☐ 2

50. Condition of Deployed Bag

☐ 1

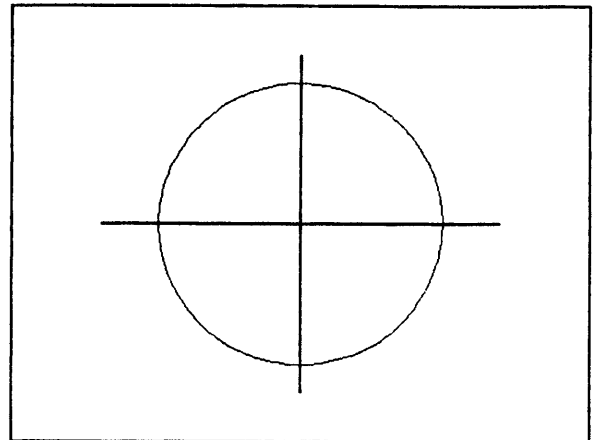
- (1) Bag intact  
(2) Split or torn  
(3) Cut by object in impact  
(4) Cut after accident  
(5) Other  
(8) NA (not deployed)  
(9) Unknown

DESCRIBE SYSTEM AND BAG DAMAGE:

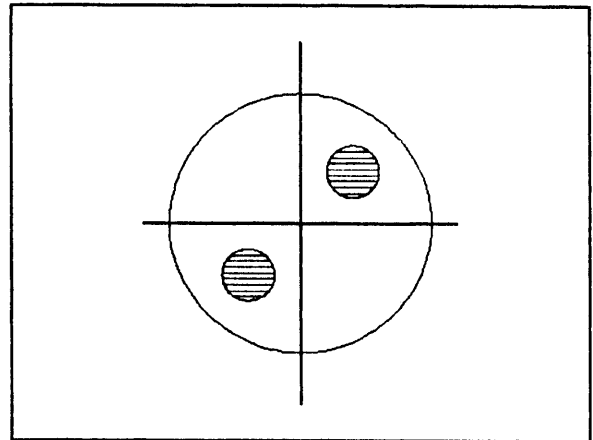
NONE

NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS  
BELOW:

FRONT



BACK





**AIRBAG SUPPLEMENT**

5

**OCCUPANTS OF AIRBAG CAR**

51. Number of Occupants in Vehicle

2

52. Number of Injured Persons

2

53. Maximum AIS in Airbag Vehicle

(0) No Injury

(1-6) AIS Severity

(7) Injured, unknown severity

(9) Unknown

1

**DRIVER**

Age: 26

Sex: MALE

54. Number of Driver Injuries

5

55. Source of Best Injury Data

(0) Not injured

(1) Autopsy

(2) Hospital Medical Records

(3) Emergency Room only

(4) Private physician, clinic

(5) Lay Coroner Report

(6) EMS Personnel

(7) Interviewee

(8) Police

(9) Unknown

7

**MAXIMUM AIS BY BODY REGION**

REGION	MAX AIS	CONTACT
Head/Neck/Face	<u>0</u>	<u>0</u>
Chest	<u>0</u>	<u>0</u>
Abdomen	<u>0</u>	<u>0</u>
Legs/Hips	<u>1</u>	<u>0 9</u>
Other (Arms)	<u>1</u>	<u>0 4</u>
Driver Maximum	<u>1</u>	<u>0 9</u>

**EJECTION**

Extent:

*None*

Portal:

OTHER VEHICLE:

*N/A*

Maximum AIS

Prime/Deploy Impact w AB Vehicle  
Event Number

CDC:

Total Delta V

Make:

Model Year:

Model:

Body Type:

**NOTES:**

**AIRBAG SUPPLEMENT**

6

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown

1

Evidence:

USAGE MARKS ON SEAT BELT TANG.

DRIVER POSTURE: Any comments Recorded (1) Yes, (2) No

2

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs, and feet. Also note hand and arm position. Did driver brace before crash? Describe:

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No

2

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No

1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

DRIVER BELIEVES THAT THERE WAS AN AIRBAG FAILURE. HE INDICATED THAT THE BAGS DID COME OUT, BUT THEY DID NOT INFLATE.

PASSENGER-AIRBAG CONTACT: (1) Yes, (2) No, (9) Unknown

1

Describe:

NO RESIDUAL EVIDENCE

# OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number _____		11. Occupant's Posture <span style="float: right;">φ</span>	
2. Case Number—Stratum <u>DSI-90-AB-1</u>	(0) Normal posture	(1) Abnormal posture (specify): _____	
3. Vehicle Number <u>φ 1</u>	(9) Unknown		
4. Occupant Number <u>φ 1</u>	<b>EJECTION/ENTRAPMENT</b>		
<b>OCCUPANT'S CHARACTERISTICS</b>		12. Ejection <span style="float: right;">φ</span>	
5. Occupant's Age <u>26</u>	(0) No ejection		
Code actual age at time of accident.	(1) Complete ejection		
(00) Less than one year old (specify by month): _____	(2) Partial ejection		
(97) 97 years and older	(3) Ejection, unknown degree		
(99) Unknown	(9) Unknown		
6. Occupant's Sex <u>1</u>	13. Ejection Area <span style="float: right;">φ</span>		
(1) Male	(0) No ejection		
(2) Female	(1) Windshield		
(9) Unknown	(2) Left front		
7. Occupant's Height <u>67</u>	(3) Right front		
Code actual height to the nearest inch.	(4) Left rear		
(99) Unknown	(5) Right rear		
8. Occupant's Weight <u>135</u>	(6) Rear		
Code actual weight to the nearest pound.	(7) Roof		
(999) Unknown	(8) Other area (e.g., back of pickup, etc.)		
9. Occupant's Role <u>1</u>	(specify): _____		
(1) Driver	(9) Unknown		
(2) Passenger	14. Ejection Medium <span style="float: right;">φ</span>		
(9) Unknown	(0) No ejection		
10. Occupant's Seat Position <u>1 1</u>	(1) Door/hatch/tailgate		
Front Seat	(2) Nonfixed roof structure		
(11) Left side	(3) Fixed glazing		
(12) Middle	(4) Nonfixed glazing (specify): _____		
(13) Right side	(5) Integral structure		
(14) Other (specify): _____	(8) Other medium (specify): _____		
Second Seat	(9) Unknown		
(21) Left side	15. Medium Status (Immediately Prior to Impact) <span style="float: right;">φ</span>		
(22) Middle	(0) No ejection		
(23) Right side	(1) Open		
(24) Other (specify): _____	(2) Closed		
Third Seat	(3) Integral structure		
(31) Left side	(9) Unknown		
(32) Middle	16. Entrapment <span style="float: right;">φ</span>		
(33) Right side	(NOTE: Entrapped means that part of the		
(34) Other (specify): _____	person was in the vehicle and mechanically		
Fourth Seat	restrained; jammed doors and immobilizing		
(41) Left side	injuries by themselves are not sufficient to		
(42) Middle	constitute entrapment.)		
(43) Right side	(0) Not entrapped		
(44) Other (specify): _____	(1) Entrapped		
(97) In or on unenclosed area	(9) Unknown		
(98) Other seat (specify): _____			
(99) Unknown			

**RESTRAINT SYSTEM AND SEAT EVALUATION****17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

**18. Manual (Active) Belt System Use** 4

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): \_\_\_\_\_

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify): \_\_\_\_\_

(99) Unknown if belt used

**19. Proper Use of Manual (Active) Belts** 1

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

**Belt Used Improperly**

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

**20. Manual (Active) Belt Failure Modes During Accident** 1

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Manual belt failure(s) (check all that apply)
- [ ] Torn webbing (stretched webbing not included)
- [ ] Broken buckle or latchplate
- [ ] Upper anchorage separated
- [ ] Other anchorage separated (specify): \_\_\_\_\_

[ ] Broken retractor

[ ] Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

**21. Automatic (Passive) Restraint System Availability** 1

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_

- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

**22. Automatic (Passive) Restraint Function** 4

- (0) Not equipped/not available

**Automatic Belt**

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

**Air Bag**

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

**23. Did Automatic (Passive) Restraint Fail** 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_

(9) Unknown

**24. Police Reported Restraint Use** 9

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): \_\_\_\_\_

(8) Restrained, type unknown

(9) Police indicated "unknown"

**25. Head Restraint Type/Damage by Occupant at This Occupant Position** 1

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): \_\_\_\_\_

(9) Unknown

26. Seat Type (This Occupant Position) φ 2
- (00) Occupant not seated or no seat
  - (01) Bucket
  - (02) Bucket with folding back
  - (03) Bench
  - (04) Bench with separate back cushions
  - (05) Bench with folding back(s)
  - (06) Split bench with separate back cushions
  - (07) Split bench with folding back(s)
  - (08) Pedestal (i.e., van type)
  - (09) Other seat type (specify):

\_\_\_\_\_

(99) Unknown

27. Seat Performance (This Occupant Position) 1
- (0) Occupant not seated or no seat
  - (1) No seat performance failure(s)
  - (2) Seat performance failure(s)  
(check all that apply)
  - [ ] Seat adjusters failed
  - [ ] Seat back folding locks failed
  - [ ] Seat tracks failed
  - [ ] Seat anchors failed
  - [ ] Deformed by impact of passenger from rear
  - [ ] Deformed by impact of passenger from front
  - [ ] Deformed by own inertial forces
  - [ ] Deformed by passenger compartment intrusion (specify):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[ ] Other (specify):

\_\_\_\_\_

(9) Unknown

### CHILD SAFETY SEAT

28. Child Safety Seat Make/Model φ φ φ
- (000) No child safety seat
  - Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual
  - (997) Other make/model (specify):

\_\_\_\_\_

(998) Unknown make/model

(999) Unknown if child safety seat used

29. Type of Child Safety Seat φ
- (0) No child safety seat
  - (1) Infant seat
  - (2) Toddler seat
  - (3) Convertible seat
  - (4) Booster seat
  - (7) Other type child safety seat (specify):

\_\_\_\_\_

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

30. Child Safety Seat Orientation φ φ
- (00) No child safety seat
  - Designed for Rear Facing for This Age/Weight
  - (01) Rear facing
  - (02) Forward facing
  - (08) Other orientation (specify):

\_\_\_\_\_

(09) Unknown orientation

- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
  - (12) Forward facing
  - (18) Other orientation (specify):

\_\_\_\_\_

(19) Unknown orientation

- Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight
- (21) Rear facing
  - (22) Forward facing
  - (28) Other orientation (specify):

\_\_\_\_\_

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage φ φ
32. Child Safety Seat Shield Usage φ φ
33. Child Safety Seat Tether Usage φ φ
- Note: Options below applicable to Variables OA31-OA33.
- (00) No child safety seat

Not Designed with  
Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

### 38. Working Days Lost

Φ 1

9

- ### 35. Treatment—Mortality

6

- (0) No treatment
  - (1) Fatal
  - (2) Fatal—ruled disease
- Nonfatal
- (3) Hospitalized
  - (4) Transported and released
  - (5) Treatment at scene—nontransported
  - (6) Treatment later
  - (8) Treatment—other (specify):

(9) Unknown

**36. Type of Medical Facility (for Initial Treatment)**

4

- (0) Not treated at a medical facility  
(1) Trauma center  
(2) Hospital  
(3) Medical clinic  
(4) Physician's office  
(5) Treatment later at medical facility  
(8) Other (specify):

(9) Unknown

### 37. Hospital stay

φ ψ

Code the number of days (up through 60) that the occupant lost from work due to the accident

(00) No working days lost

(61) 61 days or more

(62) Fatally injured

(97) Not working prior to accident

(99) Unknown

### 39. Time to Death

φ φ

\_\_\_\_ Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)

(00) Not fatal

(96) Fatal—ruled disease

(99) Unknown

**40. 1st Medically Reported Cause of Death**

φ φ

**41. 2nd Medically Reported Cause of Death**

φ φ

**42. 3rd Medically Reported Cause of Death**

φ φ

\_\_\_\_ Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death  
(00) Not fatal or no additional causes  
(97) Other result (specify):

(99) Unknown

**43. Number of Recorded Injuries for This Occupant**

05

\_\_\_\_ Code the actual number of injuries recorded for this occupant.  
(00) No recorded injuries  
(97) Injured, details unknown  
(99) Unknown if injured

## UPDATE CANDIDATE

NO [ ☒ ] YES [ ☐ ]

**\*\*\* STOP HERE \*\*\***  
**IF THERE ARE NO RECORDED INJURIES**  
**(I.E., OA43=00, 97, 99)**



## OCCUPANT INJURY FORM

1. Primary Sampling Unit Number

3. Vehicle Number

01

2. Case Number—Stratum

DSI-90-AB-1

4. Occupant Number

01

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than twenty injuries have been documented, encode the balance on the Occupant Injury Supplement.

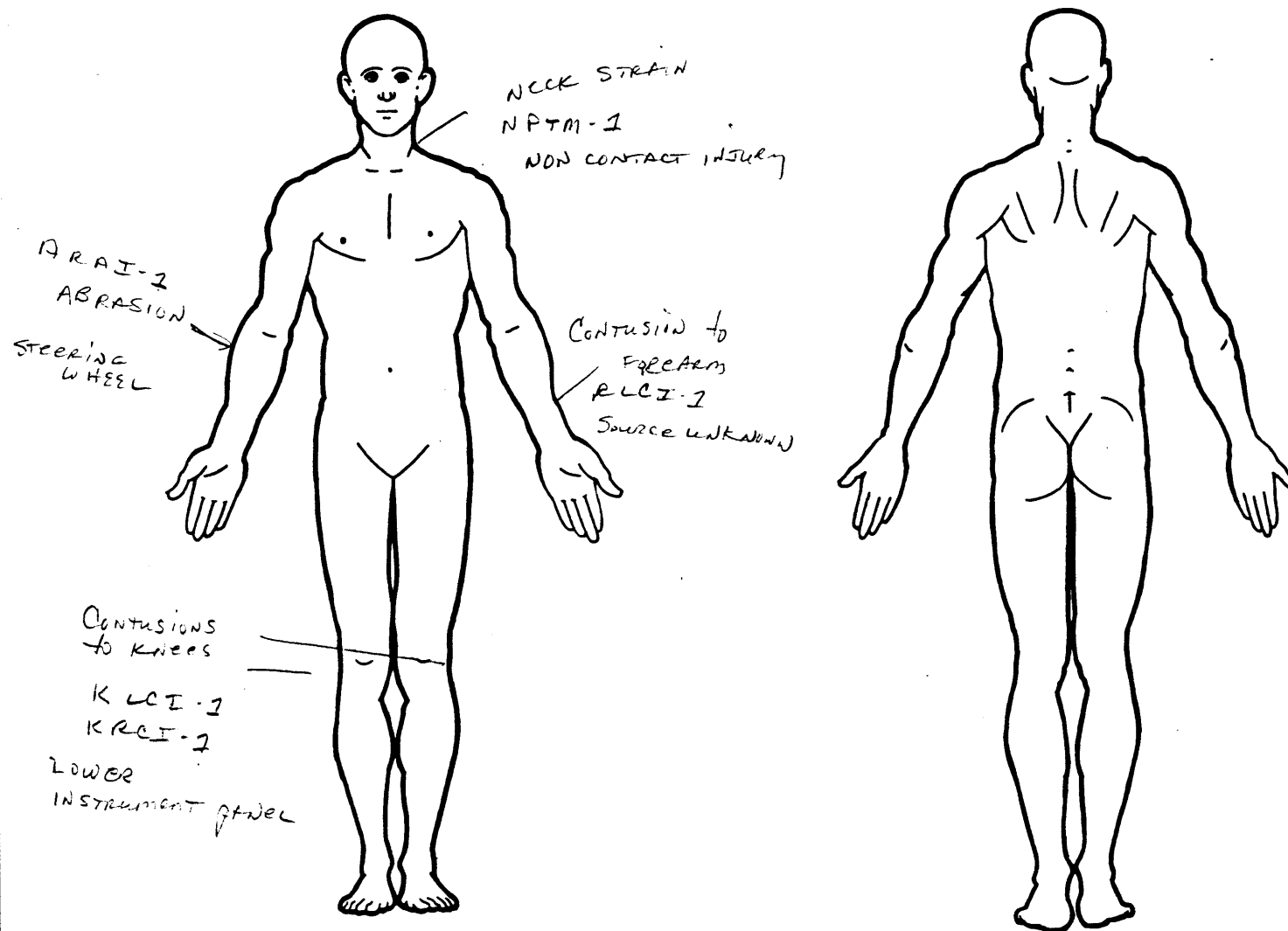
Source of Injury Data		O.I.C. — A.I.S.						Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.									
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity														
1st	5.	<u>7</u>	6. <u>A</u>	7. <u>R</u>	8. <u>A</u>	9. <u>I</u>	10. <u>1</u>	11. <u>04</u>	12. <u>2</u>	13. <u>1</u>	14. <u>00</u>									
2nd	15.	<u>7</u>	16. <u>R</u>	17. <u>L</u>	18. <u>C</u>	19. <u>I</u>	20. <u>1</u>	21. <u>97</u>	22. <u>9</u>	23. <u>7</u>	24. <u>00</u>									
3rd	25.	<u>7</u>	26. <u>K</u>	27. <u>L</u>	28. <u>C</u>	29. <u>I</u>	30. <u>1</u>	31. <u>09</u>	32. <u>2</u>	33. <u>1</u>	34. <u>00</u>									
4th	35.	<u>7</u>	36. <u>K</u>	37. <u>R</u>	38. <u>C</u>	39. <u>I</u>	40. <u>1</u>	41. <u>09</u>	42. <u>2</u>	43. <u>1</u>	44. <u>00</u>									
5th	45.	<u>7</u>	46. <u>N</u>	47. <u>P</u>	48. <u>T</u>	49. <u>1</u>	50. <u>1</u>	51. <u>92</u>	52. <u>3</u>	53. <u>3</u>	54. <u>00</u>									
6th	55.	—	56.	—	57.	—	58.	—	59.	—	60.	—	61.	—	62.	—	63.	—	64.	—
7th	65.	—	66.	—	67.	—	68.	—	69.	—	70.	—	71.	—	72.	—	73.	—	74.	—
8th	75.	—	76.	—	77.	—	78.	—	79.	—	80.	—	81.	—	82.	—	83.	—	84.	—
9th	85.	—	86.	—	87.	—	88.	—	89.	—	90.	—	91.	—	92.	—	93.	—	94.	—
10th	95.	—	96.	—	97.	—	98.	—	99.	—	100.	—	101.	—	102.	—	103.	—	104.	—
11th	105.	—	106.	—	107.	—	108.	—	109.	—	110.	—	111.	—	112.	—	113.	—	114.	—
12th	115.	—	116.	—	117.	—	118.	—	119.	—	120.	—	121.	—	122.	—	123.	—	124.	—
13th	125.	—	126.	—	127.	—	128.	—	129.	—	130.	—	131.	—	132.	—	133.	—	134.	—
14th	135.	—	136.	—	137.	—	138.	—	139.	—	140.	—	141.	—	142.	—	143.	—	144.	—
15th	145.	—	146.	—	147.	—	148.	—	149.	—	150.	—	151.	—	152.	—	153.	—	154.	—
16th	155.	—	156.	—	157.	—	158.	—	159.	—	160.	—	161.	—	162.	—	163.	—	164.	—
17th	165.	—	166.	—	167.	—	168.	—	169.	—	170.	—	171.	—	172.	—	173.	—	174.	—
18th	175.	—	176.	—	177.	—	178.	—	179.	—	180.	—	181.	—	182.	—	183.	—	184.	—
19th	185.	—	186.	—	187.	—	188.	—	189.	—	190.	—	191.	—	192.	—	193.	—	194.	—
20th	195.	—	196.	—	197.	—	198.	—	199.	—	200.	—	201.	—	202.	—	203.	—	204.	—

	Source of Injury Data	O.I.C. - A.I.S.					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
21st	—	—	—	—	—	—	— — —	—	—	— — —
22nd	—	—	—	—	—	—	— — —	—	—	— — —
23rd	—	—	—	—	—	—	— — —	—	—	— — —
24th	—	—	—	—	—	—	— — —	—	—	— — —
25th	—	—	—	—	—	—	— — —	—	—	— — —
26th	—	—	—	—	—	—	— — —	—	—	— — —
27th	—	—	—	—	—	—	— — —	—	—	— — —
28th	—	—	—	—	—	—	— — —	—	—	— — —
29th	—	—	—	—	—	—	— — —	—	—	— — —
30th	—	—	—	—	—	—	— — —	—	—	— — —
31st	—	—	—	—	—	—	— — —	—	—	— — —
32nd	—	—	—	—	—	—	— — —	—	—	— — —
33rd	—	—	—	—	—	—	— — —	—	—	— — —
34th	—	—	—	—	—	—	— — —	—	—	— — —
35th	—	—	—	—	—	—	— — —	—	—	— — —
36th	—	—	—	—	—	—	— — —	—	—	— — —
37th	—	—	—	—	—	—	— — —	—	—	— — —
38th	—	—	—	—	—	—	— — —	—	—	— — —
39th	—	—	—	—	—	—	— — —	—	—	— — —
40th	—	—	—	—	—	—	— — —	—	—	— — —
41st	—	—	—	—	—	—	— — —	—	—	— — —
42nd	—	—	—	—	—	—	— — —	—	—	— — —
43rd	—	—	—	—	—	—	— — —	—	—	— — —
44th	—	—	—	—	—	—	— — —	—	—	— — —
45th	—	—	—	—	—	—	— — —	—	—	— — —



## OFFICIAL INJURY DATA – SOFT TISSUE INJURIES

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



**SOURCE OF INJURY DATA****OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

**UNOFFICIAL**

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): \_\_\_\_\_
- (9) Police

**INJURY SOURCE****FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

**LEFT SIDE**

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

**RIGHT SIDE**

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

**INTERIOR**

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air cushion
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects
- (48) Child safety seat (specify): \_\_\_\_\_
- (49) Other interior object (specify): \_\_\_\_\_

**ROOF**

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

**FLOOR**

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

**REAR**

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

**EXTERIOR OF OCCUPANT'S VEHICLE**

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): \_\_\_\_\_
- (68) Unknown exterior objects

**EXTERIOR OF OTHER MOTOR VEHICLE**

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): \_\_\_\_\_

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): \_\_\_\_\_

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): \_\_\_\_\_

**OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT**

- (84) Ground
- (85) Other vehicle or object (specify): \_\_\_\_\_

- (86) Unknown vehicle or object

**NONCONTACT INJURY**

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): \_\_\_\_\_
- (97) Injured, unknown source

**INJURY SOURCE CONFIDENCE LEVEL**

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

**DIRECT/INDIRECT INJURY**

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

**OCCUPANT INJURY CLASSIFICATION****O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

**(W) Wrist-hand****Aspect of Injury**

- (A) Anterior-front
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

**Lesion**

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

**(G) Detachment, separation**

- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

**System/Organ**

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

**(I) Integumentary**

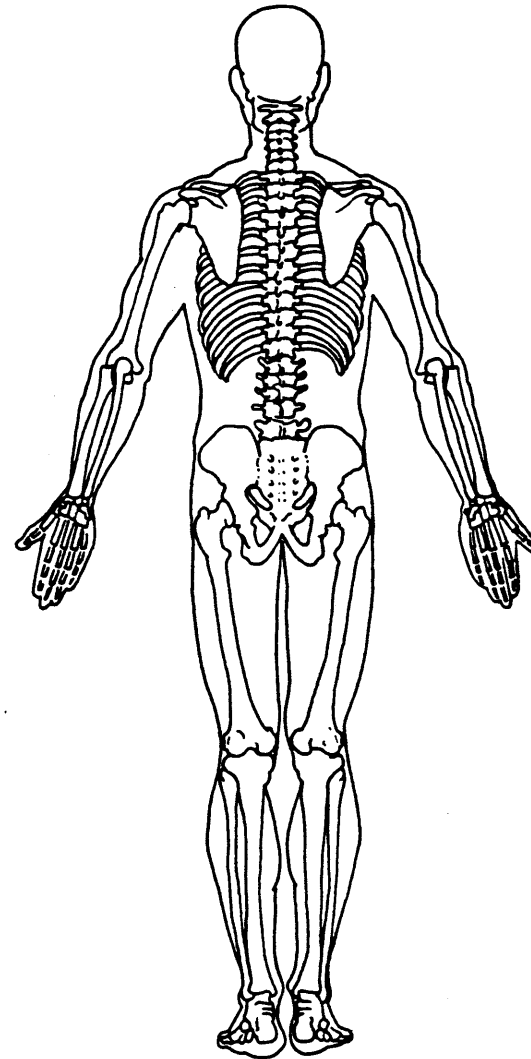
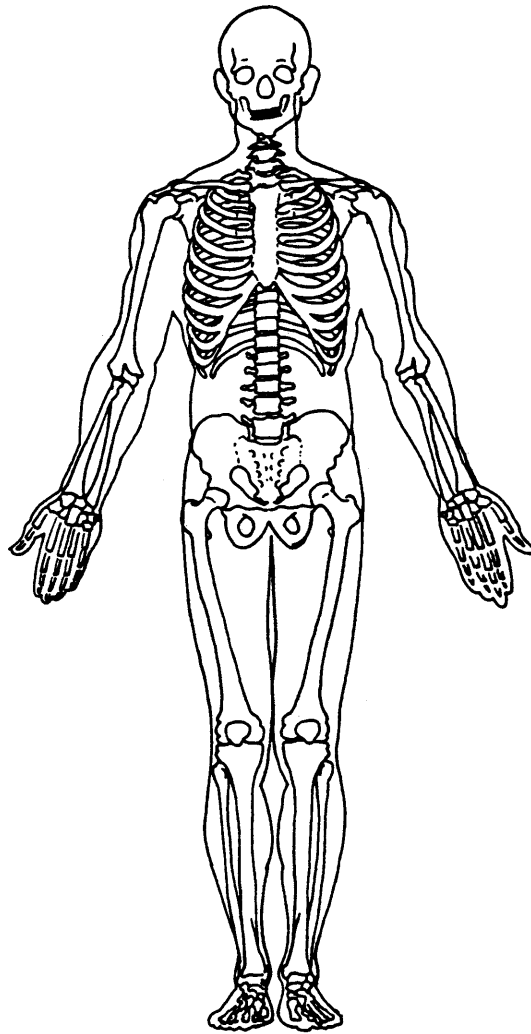
- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

**Abbreviated Injury Scale**

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity

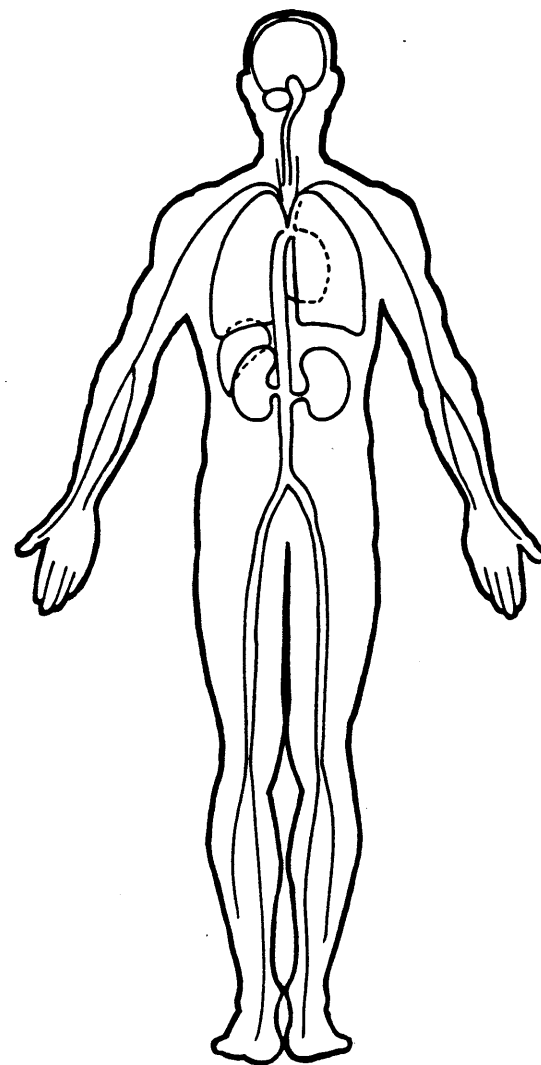
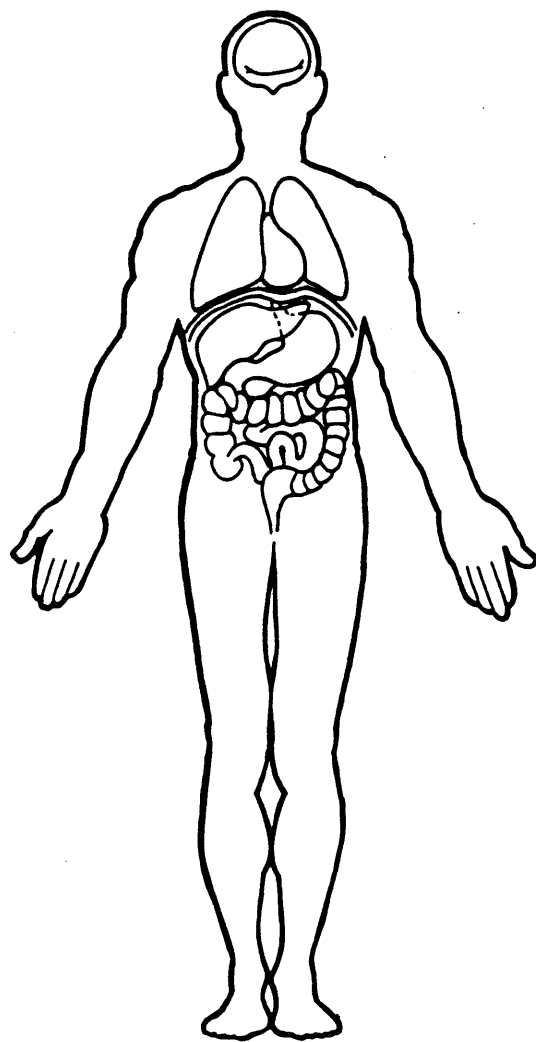
## OFFICIAL INJURY DATA – SKELETAL INJURIES

Indicate the *Location*, *Lesion*, *Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



## OFFICIAL INJURY DATA – INTERNAL INJURIES

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)





## OCCUPANT ASSESSMENT FORM

<p>1. Primary Sampling Unit Number _____</p> <p>2. Case Number—Stratum <u>DSI-90-AB-1</u></p> <p>3. Vehicle Number <u>φ 1</u></p> <p>4. Occupant Number <u>φ 2</u></p> <p style="text-align: center;"><b>OCCUPANT'S CHARACTERISTICS</b></p> <p>5. Occupant's Age <u>2 1</u> Code actual age at time of accident. (00) Less than one year old (specify by month): _____ (97) 97 years and older (99) Unknown</p> <p>6. Occupant's Sex <u>2</u> (1) Male (2) Female (9) Unknown</p> <p>7. Occupant's Height <u>6 2</u> Code actual height to the nearest inch. (99) Unknown</p> <p>8. Occupant's Weight <u>1 1 φ</u> Code actual weight to the nearest pound. (999) Unknown</p> <p>9. Occupant's Role <u>2</u> (1) Driver (2) Passenger (9) Unknown</p> <p>10. Occupant's Seat Position <u>1 3</u> Front Seat (11) Left side (12) Middle (13) Right side (14) Other (specify): _____ Second Seat (21) Left side (22) Middle (23) Right side (24) Other (specify): _____ Third Seat (31) Left side (32) Middle (33) Right side (34) Other (specify): _____ Fourth Seat (41) Left side (42) Middle (43) Right side (44) Other (specify): _____ (97) In or on unenclosed area (98) Other seat (specify): _____ (99) Unknown</p>	<p>11. Occupant's Posture <u>φ</u> (0) Normal posture (1) Abnormal posture (specify): _____ (9) Unknown</p> <p style="text-align: center;"><b>EJECTION/ENTRAPMENT</b></p> <p>12. Ejection <u>φ</u> (0) No ejection (1) Complete ejection (2) Partial ejection (3) Ejection, unknown degree (9) Unknown</p> <p>13. Ejection Area <u>φ</u> (0) No ejection (1) Windshield (2) Left front (3) Right front (4) Left rear (5) Right rear (6) Rear (7) Roof (8) Other area (e.g., back of pickup, etc.) (specify): _____ (9) Unknown</p> <p>14. Ejection Medium <u>φ</u> (0) No ejection (1) Door/hatch/tailgate (2) Nonfixed roof structure (3) Fixed glazing (4) Nonfixed glazing (specify): _____ (5) Integral structure (8) Other medium (specify): _____ (9) Unknown</p> <p>15. Medium Status (Immediately Prior to Impact) <u>φ</u> (0) No ejection (1) Open (2) Closed (3) Integral structure (9) Unknown</p> <p>16. Entrapment <u>φ</u> (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.) (0) Not entrapped (1) Entrapped (9) Unknown</p>
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**RESTRAINT SYSTEM AND SEAT EVALUATION****17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

**18. Manual (Active) Belt System Use** φ φ

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): \_\_\_\_\_

INTERVIEWEE INDICATED  
USE, BUT IN JOURNALS  
VEHICLE INSPECTION  
SUGGEST OTHERWISE

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat

(specify): \_\_\_\_\_

(99) Unknown if belt used

**19. Proper Use of Manual (Active) Belts** φ

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

**20. Manual (Active) Belt Failure Modes During Accident** φ

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Manual belt failure(s) (check all that apply)
- [ ] Torn webbing (stretched webbing not included)
- [ ] Broken buckle or latchplate
- [ ] Upper anchorage separated
- [ ] Other anchorage separated (specify): \_\_\_\_\_

[ ] Broken retractor

[ ] Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

**21. Automatic (Passive) Restraint System Availability** 1

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_

- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

**22. Automatic (Passive) Restraint Function** 4

- (0) Not equipped/not available

Automatic Belt

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

Air Bag

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

**23. Did Automatic (Passive) Restraint Fail** 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_

(9) Unknown

**24. Police Reported Restraint Use** 2

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): \_\_\_\_\_

(8) Restrained, type unknown

(9) Police indicated "unknown"

**25. Head Restraint Type/Damage by Occupant at This Occupant Position** 1

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): \_\_\_\_\_

(9) Unknown

26. Seat Type (This Occupant Position) φ 2
- (00) Occupant not seated or no seat  
 (01) Bucket  
 (02) Bucket with folding back  
 (03) Bench  
 (04) Bench with separate back cushions  
 (05) Bench with folding back(s)  
 (06) Split bench with separate back cushions  
 (07) Split bench with folding back(s)  
 (08) Pedestal (i.e., van type)  
 (09) Other seat type (specify):

\_\_\_\_\_

(99) Unknown

27. Seat Performance (This Occupant Position) 1
- (0) Occupant not seated or no seat  
 (1) No seat performance failure(s)  
 (2) Seat performance failure(s)  
 (check all that apply)
- ☐ [ ] Seat adjusters failed  
☐ [ ] Seat back folding locks failed  
☐ [ ] Seat tracks failed  
☐ [ ] Seat anchors failed  
☐ [ ] Deformed by impact of passenger from rear  
☐ [ ] Deformed by impact of passenger from front  
☐ [ ] Deformed by own inertial forces  
☐ [ ] Deformed by passenger compartment intrusion (specify):

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

☐ [ ] Other (specify):

\_\_\_\_\_  
 (9) Unknown

### CHILD SAFETY SEAT

28. Child Safety Seat Make/Model φ φ φ
- (000) No child safety seat  
 Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual  
 (997) Other make/model (specify):

\_\_\_\_\_  
 (998) Unknown make/model  
 (999) Unknown if child safety seat used

29. Type of Child Safety Seat φ
- (0) No child safety seat  
 (1) Infant seat  
 (2) Toddler seat  
 (3) Convertible seat  
 (4) Booster seat  
 (7) Other type child safety seat (specify):

\_\_\_\_\_  
 (8) Unknown child safety seat type  
 (9) Unknown if child safety seat used

30. Child Safety Seat Orientation φ φ
- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight  
 (01) Rear facing  
 (02) Forward facing  
 (08) Other orientation (specify):

\_\_\_\_\_  
 (09) Unknown orientation

Designed for Forward Facing for This Age/Weight  
 (11) Rear facing  
 (12) Forward facing  
 (18) Other orientation (specify):

\_\_\_\_\_  
 (19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight  
 (21) Rear facing  
 (22) Forward facing  
 (28) Other orientation (specify):

\_\_\_\_\_  
 (29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage φ φ
32. Child Safety Seat Shield Usage φ φ
33. Child Safety Seat Tether Usage φ φ
- Note: Options below applicable to Variables OA31-OA33.  
 (00) No child safety seat

Not Designed with Harness/Shield/Tether  
 (01) After market harness/shield/tether added, not used  
 (02) After market harness/shield/tether used  
 (03) Child safety seat used, but no after market harness/shield/tether added  
 (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether  
 (11) Harness/shield/tether not used  
 (12) Harness/shield/tether used  
 (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether  
 (21) Harness/shield/tether not used  
 (22) Harness/shield/tether used  
 (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

**INJURY CONSEQUENCES****34. Injury Severity (Police Rating)** 9

- (0) O—No injury
- (1) C—Possible injury
- (2) B—Nonincapacitating injury
- (3) A—Incapacitating injury
- (4) K—Killed
- (5) U—Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

**35. Treatment—Mortality** 6

- (0) No treatment
- (1) Fatal
- (2) Fatal—ruled disease

## Nonfatal

- (3) Hospitalized
- (4) Transported and released
- (5) Treatment at scene—nontransported
- (6) Treatment later
- (8) Treatment—other (specify):  
\_\_\_\_\_

(9) Unknown

**36. Type of Medical Facility (for Initial Treatment)** 4

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):  
\_\_\_\_\_

(9) Unknown

**37. Hospital stay** 6 6

- \_\_\_\_\_ Code number of days (up through 60)  
that the occupant stayed in the hospital
- (00) Not hospitalized
  - (61) 61 days or more
  - (99) Unknown

**38. Working Days Lost** 6 1

- \_\_\_\_\_ Code the number of days  
(up through 60) that the occupant  
lost from work due to the accident
- (00) No working days lost
  - (61) 61 days or more
  - (62) Fatally injured
  - (97) Not working prior to accident
  - (99) Unknown

**39. Time to Death** 6 6

- \_\_\_\_\_ Code number of hours from time of  
accident to time of death up through 24  
hours. If time of death is greater than 24  
hours, code number of days. (Note: 1 day =  
31, 2 days = 32, ... n days = 30 + n up through  
30 days = 60)
- (00) Not fatal
  - (96) Fatal—ruled disease
  - (99) Unknown

**40. 1st Medically Reported Cause of Death** 6 6**41. 2nd Medically Reported Cause of Death** 6 6**42. 3rd Medically Reported Cause of Death** 6 6

- \_\_\_\_\_ Code the Occupant Injury from line  
number(s) for the medically reported  
injury(s) which reportedly contributed to  
this occupant's death
- (00) Not fatal or no additional causes
  - (97) Other result (specify):  
\_\_\_\_\_

(99) Unknown

**43. Number of Recorded Injuries for  
This Occupant** 6 5

- \_\_\_\_\_ Code the actual number of  
injuries recorded for this occupant.
- (00) No recorded injuries
  - (97) Injured, details unknown
  - (99) Unknown if injured

UPDATE CANDIDATE

NO [ ☒ ] YES [ ☐ ]

\*\*\* STOP HERE \*\*\*

IF THERE ARE NO RECORDED INJURIES  
(I.E., OA43=00, 97, 99)





U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

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Form Approved  
O.M.B. No. 2127-0021  
NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

## OCCUPANT INJURY FORM

1. Primary Sampling Unit Number

3. Vehicle Number

φ 1

2. Case Number—Stratum

DSI-90-AB-1

4. Occupant Number

φ 2

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than twenty injuries have been documented, encode the balance on the Occupant Injury Supplement.

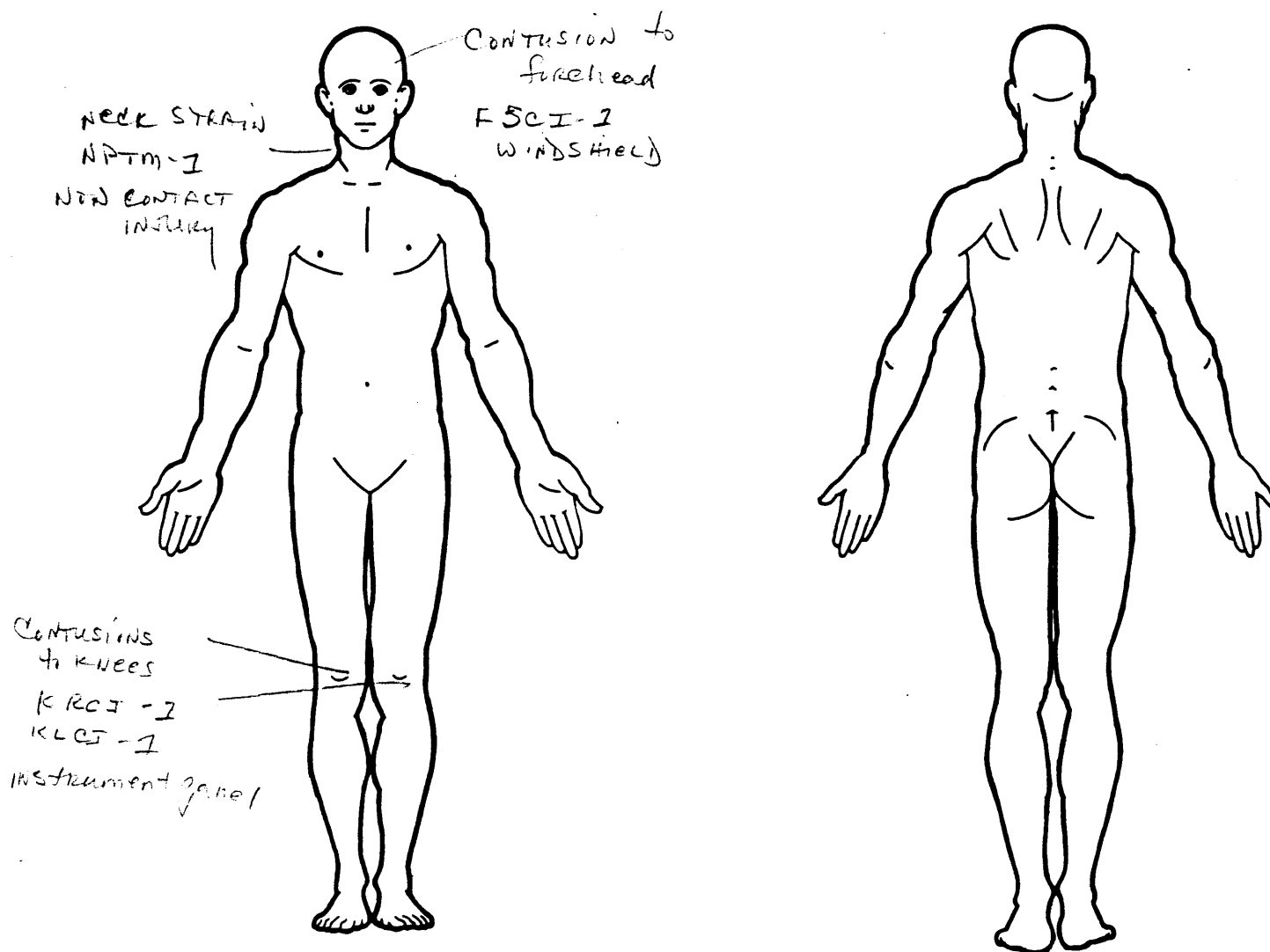
	Source of Injury Data	O.I.C.—A.I.S.					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
1st	5. <u>7</u>	6. <u>F</u>	7. <u>S</u>	8. <u>C</u>	9. <u>I</u>	10. <u>1</u>	11. <u>φ 1</u>	12. <u>1</u>	13. <u>1</u>	14. <u>φ φ</u>
2nd	15. <u>7</u>	16. <u>K</u>	17. <u>R</u>	18. <u>C</u>	19. <u>I</u>	20. <u>1</u>	21. <u>1 1</u>	22. <u>2</u>	23. <u>1</u>	24. <u>φ φ</u>
3rd	25. <u>7</u>	26. <u>K</u>	27. <u>L</u>	28. <u>C</u>	29. <u>I</u>	30. <u>1</u>	31. <u>1 1</u>	32. <u>2</u>	33. <u>1</u>	34. <u>φ φ</u>
4th	35. <u>7</u>	36. <u>H</u>	37. <u>W</u>	38. <u>K</u>	39. <u>B</u>	40. <u>1</u>	41. <u>φ 1</u>	42. <u>1</u>	43. <u>1</u>	44. <u>φ φ</u>
5th	45. <u>7</u>	46. <u>N</u>	47. <u>P</u>	48. <u>T</u>	49. <u>M</u>	50. <u>1</u>	51. <u>φ 1</u>	52. <u>3</u>	53. <u>2</u>	54. <u>φ φ</u>
6th	55. <u>  </u>	56. <u>  </u>	57. <u>  </u>	58. <u>  </u>	59. <u>  </u>	60. <u>  </u>	61. <u>  </u>	62. <u>  </u>	63. <u>  </u>	64. <u>  </u>
7th	65. <u>  </u>	66. <u>  </u>	67. <u>  </u>	68. <u>  </u>	69. <u>  </u>	70. <u>  </u>	71. <u>  </u>	72. <u>  </u>	73. <u>  </u>	74. <u>  </u>
8th	75. <u>  </u>	76. <u>  </u>	77. <u>  </u>	78. <u>  </u>	79. <u>  </u>	80. <u>  </u>	81. <u>  </u>	82. <u>  </u>	83. <u>  </u>	84. <u>  </u>
9th	85. <u>  </u>	86. <u>  </u>	87. <u>  </u>	88. <u>  </u>	89. <u>  </u>	90. <u>  </u>	91. <u>  </u>	92. <u>  </u>	93. <u>  </u>	94. <u>  </u>
10th	95. <u>  </u>	96. <u>  </u>	97. <u>  </u>	98. <u>  </u>	99. <u>  </u>	100. <u>  </u>	101. <u>  </u>	102. <u>  </u>	103. <u>  </u>	104. <u>  </u>
11th	105. <u>  </u>	106. <u>  </u>	107. <u>  </u>	108. <u>  </u>	109. <u>  </u>	110. <u>  </u>	111. <u>  </u>	112. <u>  </u>	113. <u>  </u>	114. <u>  </u>
12th	115. <u>  </u>	116. <u>  </u>	117. <u>  </u>	118. <u>  </u>	119. <u>  </u>	120. <u>  </u>	121. <u>  </u>	122. <u>  </u>	123. <u>  </u>	124. <u>  </u>
13th	125. <u>  </u>	126. <u>  </u>	127. <u>  </u>	128. <u>  </u>	129. <u>  </u>	130. <u>  </u>	131. <u>  </u>	132. <u>  </u>	133. <u>  </u>	134. <u>  </u>
14th	135. <u>  </u>	136. <u>  </u>	137. <u>  </u>	138. <u>  </u>	139. <u>  </u>	140. <u>  </u>	141. <u>  </u>	142. <u>  </u>	143. <u>  </u>	144. <u>  </u>
15th	145. <u>  </u>	146. <u>  </u>	147. <u>  </u>	148. <u>  </u>	149. <u>  </u>	150. <u>  </u>	151. <u>  </u>	152. <u>  </u>	153. <u>  </u>	154. <u>  </u>
16th	155. <u>  </u>	156. <u>  </u>	157. <u>  </u>	158. <u>  </u>	159. <u>  </u>	160. <u>  </u>	161. <u>  </u>	162. <u>  </u>	163. <u>  </u>	164. <u>  </u>
17th	165. <u>  </u>	166. <u>  </u>	167. <u>  </u>	168. <u>  </u>	169. <u>  </u>	170. <u>  </u>	171. <u>  </u>	172. <u>  </u>	173. <u>  </u>	174. <u>  </u>
18th	175. <u>  </u>	176. <u>  </u>	177. <u>  </u>	178. <u>  </u>	179. <u>  </u>	180. <u>  </u>	181. <u>  </u>	182. <u>  </u>	183. <u>  </u>	184. <u>  </u>
19th	185. <u>  </u>	186. <u>  </u>	187. <u>  </u>	188. <u>  </u>	189. <u>  </u>	190. <u>  </u>	191. <u>  </u>	192. <u>  </u>	193. <u>  </u>	194. <u>  </u>
20th	195. <u>  </u>	196. <u>  </u>	197. <u>  </u>	198. <u>  </u>	199. <u>  </u>	200. <u>  </u>	201. <u>  </u>	202. <u>  </u>	203. <u>  </u>	204. <u>  </u>

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	Source of Injury Data	O.I.C. — A.I.S.					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
21st	—	—	—	—	—	—	— — —	—	—	— — —
22nd	—	—	—	—	—	—	— — —	—	—	— — —
23rd	—	—	—	—	—	—	— — —	—	—	— — —
24th	—	—	—	—	—	—	— — —	—	—	— — —
25th	—	—	—	—	—	—	— — —	—	—	— — —
26th	—	—	—	—	—	—	— — —	—	—	— — —
27th	—	—	—	—	—	—	— — —	—	—	— — —
28th	—	—	—	—	—	—	— — —	—	—	— — —
29th	—	—	—	—	—	—	— — —	—	—	— — —
30th	—	—	—	—	—	—	— — —	—	—	— — —
31st	—	—	—	—	—	—	— — —	—	—	— — —
32nd	—	—	—	—	—	—	— — —	—	—	— — —
33rd	—	—	—	—	—	—	— — —	—	—	— — —
34th	—	—	—	—	—	—	— — —	—	—	— — —
35th	—	—	—	—	—	—	— — —	—	—	— — —
36th	—	—	—	—	—	—	— — —	—	—	— — —
37th	—	—	—	—	—	—	— — —	—	—	— — —
38th	—	—	—	—	—	—	— — —	—	—	— — —
39th	—	—	—	—	—	—	— — —	—	—	— — —
40th	—	—	—	—	—	—	— — —	—	—	— — —
41st	—	—	—	—	—	—	— — —	—	—	— — —
42nd	—	—	—	—	—	—	— — —	—	—	— — —
43rd	—	—	—	—	—	—	— — —	—	—	— — —
44th	—	—	—	—	—	—	— — —	—	—	— — —
45th	—	—	—	—	—	—	— — —	—	—	— — —

## OFFICIAL INJURY DATA—SOFT TISSUE INJURIES

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



**SOURCE OF INJURY DATA****OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

**UNOFFICIAL**

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): \_\_\_\_\_
- (9) Police

**INJURY SOURCE****FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

**LEFT SIDE**

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail

- (27) Other left side object (specify): \_\_\_\_\_

**RIGHT SIDE**

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_

- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

**INTERIOR**

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_

- (44) Head restraint system
- (45) Air cushion
- (46) Other occupants (specify): \_\_\_\_\_

- (47) Interior loose objects
- (48) Child safety seat (specify): \_\_\_\_\_

- (49) Other interior object (specify): \_\_\_\_\_

**ROOF**

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

**FLOOR**

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

**REAR**

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

**EXTERIOR OF OCCUPANT'S VEHICLE**

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): \_\_\_\_\_

- (68) Unknown exterior objects

**EXTERIOR OF OTHER MOTOR VEHICLE**

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): \_\_\_\_\_

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): \_\_\_\_\_

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): \_\_\_\_\_

- (83) Unknown exterior of other motor vehicle

**OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT**

- (84) Ground
- (85) Other vehicle or object (specify): \_\_\_\_\_

- (86) Unknown vehicle or object

**NONCONTACT INJURY**

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): \_\_\_\_\_

- (97) Injured, unknown source

**INJURY SOURCE CONFIDENCE LEVEL**

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

**DIRECT/INDIRECT INJURY**

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

**OCCUPANT INJURY CLASSIFICATION****O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

**(W) Wrist-hand****Aspect of Injury**

- (A) Anterior-front
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

**Lesion**

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

**(G) Detachment, separation**

- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

**System/Organ**

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

**(I) Integumentary**

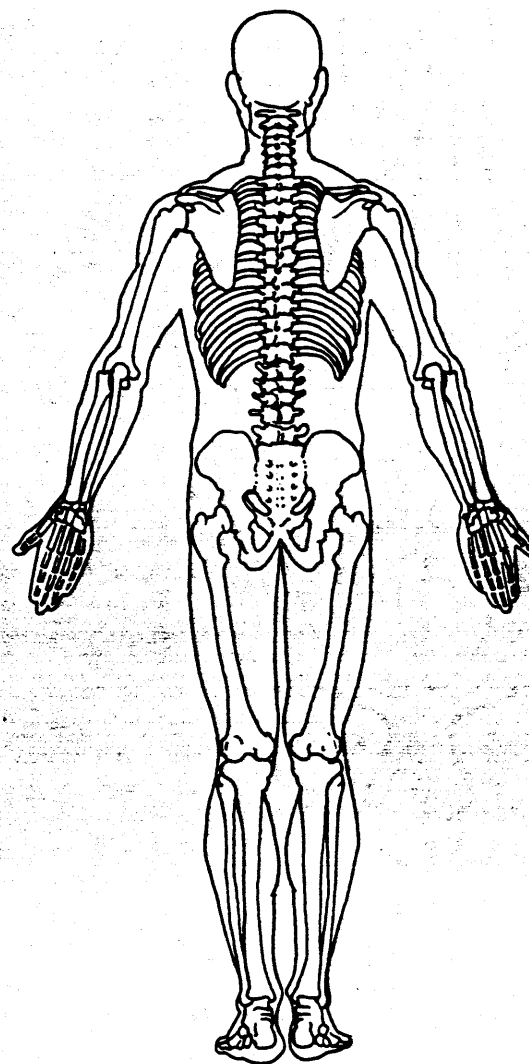
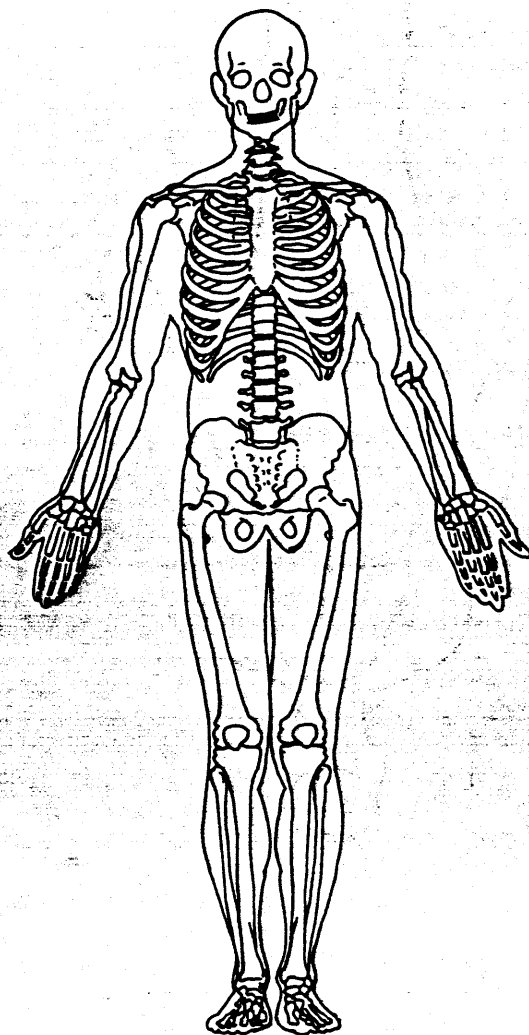
- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

**Abbreviated Injury Scale**

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity

## OFFICIAL INJURY DATA – SKELETAL INJURIES

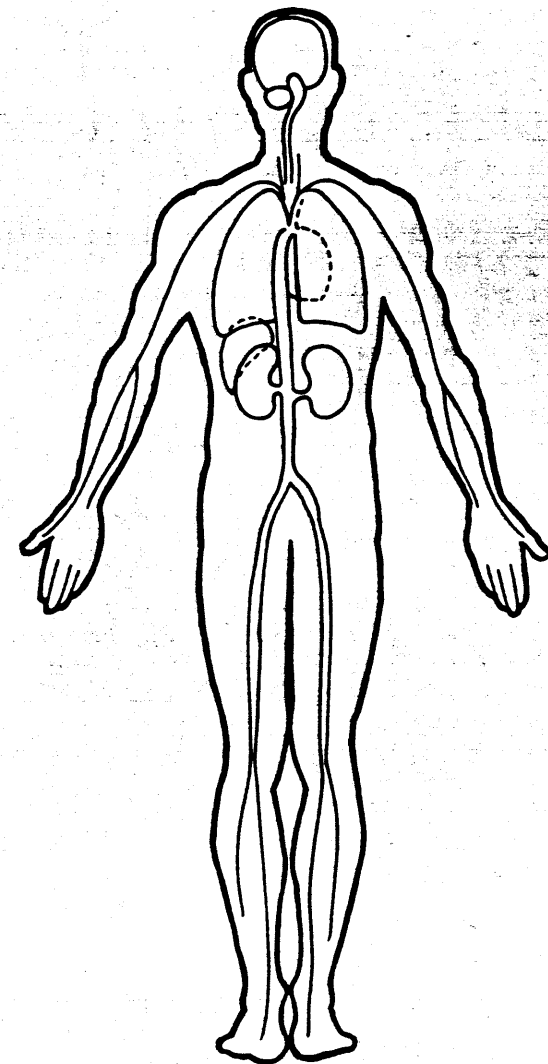
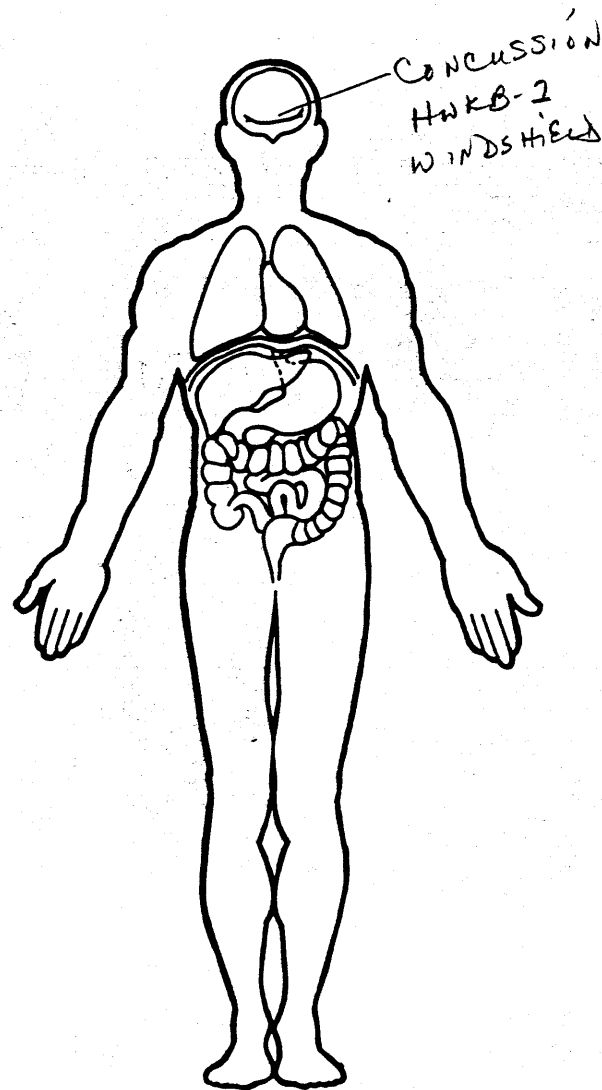
Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



## OFFICIAL INJURY DATA — INTERNAL INJURIES

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Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



## APPENDIX B. CRASH PROGRAM SUMMARY

### Impact 1:

## SUMMARY OF CRASH3 RESULTS

VEHICLE # 1

*****						
*	IMPACT		SPEED CHANGE		BASIS	
*	SPEED		SPEED		OF	
*	MPH		MPH		RESULTS	
*						
*****						
*	*	*	*	*	*	
*	FWD	LAT	TOTAL	LONG.	LATERAL	
*	*	*	*	*	*	
*****						
*	*	*	*	*	*	
*	*	*	*	*	*	SPINOUT TRAJECTORIES AND
*	*	*	*	*	*	CONSERVATION OF LINEAR
*	*	*	*	*	*	MOMENTUM
*	*	*	*	*	*	
*****						
*	*	*	*	*	*	
*	*	*	*	*	*	SPINOUT TRAJECTORIES AND
*	*	*	*	*	*	DAMAGE
*	*	*	*	*	*	
*****						
	*	*	*	*	*	
	*	8.6	* -8.6	*	- .8	DAMAGE DATA ONLY
	*	*	*	*	*	
*****						

# VEHICLE # 2

```

*****
*                               *
*   IMPACT   *                 *
*   SPEED    *   SPEED CHANGE *
*   MPH      *   MPH          *   BASIS   *
*           *                 *
*****                               OF
*   *   *   *   *   *   *
* FWD * LAT * TOTAL * LONG. * LATERAL *   RESULTS
*   *   *   *   *   *   *
*****
*   *   *   *   *   *
*   *   *   *   *   *   SPINOUT TRAJECTORIES AND
*   *   *   *   *   *   CONSERVATION OF LINEAR
*   *   *   *   *   *   MOMENTUM
*   *   *   *   *   *
*****
*   *   *   *   *   *
*   *   *   *   *   *   SPINOUT TRAJECTORIES AND
*   *   *   *   *   *   DAMAGE
*   *   *   *   *   *
*****
*   *   *   *   *
*   .0 *   .0 *   .0 *   DAMAGE DATA ONLY
*   *   *   *   *
*****

```



## SUMMARY OF DAMAGE DATA

(\* INDICATES DEFAULT VALUE)

## VEHICLE # 1

## VEHICLE # 2

TYPE-----CATEGORY 1  
 WEIGHT----- 3177.0 LBS.  
 CDC-----12FREE1  
 L----- 58.0 IN.  
 C1----- .0 IN.  
 C2----- 6.0 IN.  
 C3----- .0 IN.  
 C4----- .0 IN.  
 C5----- .0 IN.  
 C6----- .0 IN.  
 D----- 22.5  
 RHO----- 1.00 \*  
 ANG----- 5.0 DEG.  
 D'----- 32.2 IN.

TYPE-----CATEGORY \*  
 WEIGHT-----1000000.0 LBS. \*  
 CDC-----BARRIER  
 L----- .0 IN. \*  
 C1----- .0 IN. \*  
 C2----- .0 IN. \*  
 C3----- .0 IN. \*  
 C4----- .0 IN. \*  
 C5----- .0 IN. \*  
 C6----- .0 IN. \*  
 D----- .0 \*  
 RHO----- 1.00 \*  
 ANG----- .0 DEG. \*  
 D'----- .0 IN.

## DIMENSIONS AND INERTIAL PROPERTIES

A1	=	45.1	INCHES	A2	=	50.0	INCHES
B1	=	48.1	INCHES	B2	=	50.0	INCHES
TR1	=	51.1	INCHES	TR2	=	50.0	INCHES
I1	=	16493.4	LB-SEC**2-IN	I2	=	2587992000.0	LB-SEC**2-IN
M1	=	8.222	LB-SEC**2/IN	M2	=	2587.992	LB-SEC**2/IN
XF1	=	76.0	INCHES	XF2	=	50.0	INCHES
XR1	=	-83.8	INCHES	XR2	=	-50.0	INCHES
YS1	=	30.4	INCHES	YS2	=	50.0	INCHES

Impact 2:

S U M M A R Y   O F   C R A S H 3   R E S U L T S

VEHICLE # 1

```
*****
*                               *
*   IMPACT   *                 *                               *
*   SPEED    *   SPEED CHANGE *                               *
*   MPH      *   MPH          *   BASIS                       *
*                               *   OF                       *
*****                               *
*   *   *   *   *   *   *   *                               *
* FWD * LAT * TOTAL * LONG. * LATERAL *   RESULTS           *
*   *   *   *   *   *   *   *                               *
*****                               *
*   *   *   *   *   *   *   *                               *
*   *   *   *   *   *   *   *   SPINOUT TRAJECTORIES AND *
*   *   *   *   *   *   *   *   CONSERVATION OF LINEAR  *
*   *   *   *   *   *   *   *   MOMENTUM                 *
*   *   *   *   *   *   *   *                               *
*****                               *
*   *   *   *   *   *   *   *                               *
*   *   *   *   *   *   *   *   SPINOUT TRAJECTORIES AND *
*   *   *   *   *   *   *   *   DAMAGE                   *
*   *   *   *   *   *   *   *                               *
*****                               *
*                               *                               *
*   8.7 * -8.6 *   1.5 * DAMAGE DATA ONLY                 *
*   *   *   *   *   *   *   *                               *
*****
```

VEHICLE # 2

```

*****
*                                     *
*   IMPACT   *                       *                                     *
*   SPEED    *   SPEED CHANGE   *                                     *
*   MPH      *   MPH            *   BASIS   *                                     *
*           *                   *           *                                     *
*****                               OF                                     *
*   *   *   *   *   *   *   *                                     *
* FWD * LAT * TOTAL * LONG. * LATERAL * RESULTS *                                     *
*   *   *   *   *   *   *   *                                     *
*****
*   *   *   *   *   *   *                                     *
*   *   *   *   *   *   * SPINOUT TRAJECTORIES AND *
*   *   *   *   *   *   * CONSERVATION OF LINEAR *
*   *   *   *   *   *   * MOMENTUM *
*   *   *   *   *   *   *                                     *
*****
*   *   *   *   *   *   *                                     *
*   *   *   *   *   *   * SPINOUT TRAJECTORIES AND *
*   *   *   *   *   *   * DAMAGE *
*   *   *   *   *   *   *                                     *
*****
*   *   *   *   *   *   *                                     *
*   .0 *   .0 *   .0 * DAMAGE DATA ONLY *
*   *   *   *   *   *   *                                     *
*****

```

## SUMMARY OF DAMAGE DATA

(\* INDICATES DEFAULT VALUE)

## VEHICLE # 1

## VEHICLE # 2

TYPE-----CATEGORY 1  
 WEIGHT----- 3177.0 LBS.  
 CDC-----12FLEE2  
 L----- 58.0 IN.  
 C1----- 5.0 IN.  
 C2----- 3.3 IN.  
 C3----- 2.5 IN.  
 C4----- 2.0 IN.  
 C5----- 1.0 IN.  
 C6----- 1.0 IN.  
 D----- -22.0  
 RHO----- 1.00 \*  
 ANG----- -10.0 DEG.  
 D'----- -29.9 IN.

TYPE-----CATEGORY \*  
 WEIGHT-----1000000.0 LBS. \*  
 CDC-----BARRIER  
 L----- .0 IN. \*  
 C1----- .0 IN. \*  
 C2----- .0 IN. \*  
 C3----- .0 IN. \*  
 C4----- .0 IN. \*  
 C5----- .0 IN. \*  
 C6----- .0 IN. \*  
 D----- .0 \*  
 RHO----- 1.00 \*  
 ANG----- .0 DEG. \*  
 D'----- .0 IN.

## DIMENSIONS AND INERTIAL PROPERTIES

A1	=	45.1	INCHES	A2	=	50.0	INCHES
B1	=	48.1	INCHES	B2	=	50.0	INCHES
TR1	=	51.1	INCHES	TR2	=	50.0	INCHES
I1	=	16493.4	LB-SEC**2-IN	I2	=	2587992000.0	LB-SEC**2-IN
M1	=	8.222	LB-SEC**2/IN	M2	=	2587.992	LB-SEC**2/IN
XF1	=	76.0	INCHES	XF2	=	50.0	INCHES
XR1	=	-83.8	INCHES	XR2	=	-50.0	INCHES
YS1	=	30.4	INCHES	YS2	=	50.0	INCHES